

# Creating Cubes for AVR On a Shoe-String Budget

3<sup>rd</sup> Annual PHIN Conference

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# Outline

- Demonstration
- Definition of cube
- Shift in reporting paradigm
- Process steps to create a cube
- Gee whiz features
- Questions and Answers
- Contact details

# Outline Page One

- Demo
  - Question 1
  - Question 2
  - Question 3
- Definitions

# Outline Page Two

- The Reporting Paradigm Shift
- Process Steps
  - Step One
  - Step Two
  - Step Three
  - Step Four
  - Step Five
  - Step Six
  - Step Seven
- Gee Whiz Features
- Q & A

# Demo

- Data set used
  - Tennessee's Tuberculosis Risk Assessment Tool (The RAT)
    - Calendar year 2004
    - 40,626 risk assessments
    - 70 variables per assessment

# Question One

- Are our field staff using the results of the RAT to perform tuberculin skin tests appropriately?  
i.e.,
- Test those assessed at high risk of TB infection
- Not test those assessed at low risk of TB infection

# Demo Question One

TN TB High Risk Assessm		
Enc Date ▼	Jurisdiction ▼	Country of Origin ▼
2004	All	All
Drop Column Fields Here		
Drop Row Fields Here	Pat Count	
	40,626	

1. Drag and drop Jurisdiction from Filter to Row Area

TN TB High Risk Assessment Tool (R				
Enc Date ▼	Race ▼	Country of Origin ▼	Sex ▼	Hispanic ▼
2004	All	All	All	All
Drop Column Fields Here				
Jurisdiction ▼		Pat Count		
<input type="checkbox"/>	MSR	2,785		
<input type="checkbox"/>	WTR	4,190		
<input type="checkbox"/>	JMR	1,569		
<input type="checkbox"/>	SCR	2,931		
<input type="checkbox"/>	MCR	4,206		
<input type="checkbox"/>	NDR	7,136		
<input type="checkbox"/>	UCR	2,913		
<input type="checkbox"/>	SER	1,547		
<input type="checkbox"/>	CHR	3,664		
<input type="checkbox"/>	ETR	2,259		
<input type="checkbox"/>	KKR	4,834		
<input type="checkbox"/>	NER	1,646		
<input type="checkbox"/>	SUL	946		
Grand Total		40,626		

# Demo Question One

**TN TB High Risk Assessment Tool (RAT)**

Enc Date ▼ Race ▼ Country of Origin ▼ Sex ▼ Hispanic ▼  
2004 All All All All

**Risk of TB Infection(H) ▼**

	(Blank)	High	Low	Grand Total
Jurisdiction ▼	Pat Count	Pat Count	Pat Count	Pat Count
MSR	5	1,836	944	2,785
WTR	23	2,955	1,212	4,190
JMR	9	1,089	471	1,569
SCR	33	1,832	1,066	2,931
MCR	20	3,082	1,104	4,206
NDR	53	4,895	2,188	7,136
UCR	18	1,634	1,261	2,913
SER	76	918	553	1,547
CHR	35	1,626	2,003	3,664
ETR	3	1,247	1,009	2,259
KKR	12	3,708	1,114	4,834
NER	21	1,076	549	1,646
	516	422	946	
	26,414	13,896	40,626	

**PivotTable Field List**

Drag items to the PivotTable list

- Prev Diag of TB
- Prev PPD
- Prev PPD MM
- Prev PPD Pos Neg
- Prev PPD Yr
- Prison Or Jail
- Provider
- Race
- Jurisdiction
- Risk of TB Infection(H)**
- Sex
- Silicosis
- Site
- ST Descrip
- ST Result

Add to Column Area

2. Display 'Field List', highlight '**Risk of TB Infection**' field and drag and drop to column area



# Demo Question One

TN TB High Risk Assessment Tool (RAT)				
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾
2004	All	All	All	All
Risk of TB Infection(H ▾)				
	High	Low	(Blank)	Grand Total
Jurisdiction ▾	Pat Count	Pat Count	Pat Count	Pat Count
⊞ MSR	1,836	944	5	2,785
⊞ WTR	2,955	1,212	23	4,190
⊞ JMR	1,089	471	9	1,569
⊞ SCR	1,832	1,066	33	2,931
⊞ MCR	3,082	1,104	20	4,206
⊞ NDR	4,895	2,188	53	7,136
⊞ UCR	1,634	1,261	18	2,913
⊞ SER	918	553	76	1,547
⊞ CHR	1,626	2,003	35	3,664
⊞ ETR	1,247	1,009	3	2,259
⊞ KKR	3,708	1,114	12	4,834
⊞ NER	1,076	549	21	1,646
⊞ SUL	516	422	8	946
Grand Total	26,414	13,896	316	40,626

3. Rearrange columns by dragging and dropping

4. Insert the variable  
'Test' into column area  
from Field List

# Question One

5. Drill into column  
details

TN TB High Risk Assessment Tool (RAT)										
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾						
2004	All	All	All	All						
Risk of TB Infection(H ▾)				Test ▾						
High			Low			(Blank)			Grand Total	
NO TEST	TEST	Total	NO TEST	TEST	Total	NO TEST	TEST	Total		
Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
MSR	639	1,197	1,836	168	776	944		5	5	2,785
WTR	368	2,587	2,955	263	949	1,212	8	15	23	4,190
JMR	64	1,025	1,089	43	428	471	3	6	9	1,569
SCR	109	1,723	1,832	345	721	1,066	11	22	33	2,931
MCR	485	2,597	3,082	847	257	1,104	8	12	20	4,206
NDR	1,484	3,411	4,895	1,463	725	2,188	29	24	53	7,136
UCR	317	1,317	1,634	361	900	1,261	8			
SER	98	820	918	75	478	553	5			
CHR	509	1,117	1,626	926	1,077	2,003	20			
ETR	132	1,115	1,247	357	652	1,009				
KKR	529	3,179	3,708	176	938	1,114	7	5	12	4,834
NER	336	740	1,076	186	363	549	8	13	21	1,646
SUL	88	428	516	172	250	422	1	7	8	946
Grand Total	5,158	21,256	26,414	5,308	2,500	7,812	208	316		40,626

Was patient tested  
or not?

How was patient  
assessed by the  
RAT?

6. Right click on  
any data cell

# mo Question

7. Select 'Show as→  
Percent of Row Total'

**TN TB High Risk Assessment Tool (RAT)**

Enc Date ▼ Race ▼ Country of Origin ▼ Sex ▼ Hispanic ▼  
2004 All All All All

Risk of TB Infection(H ▼ Test ▼  
☐ High ☐ Low ☐ (Blank)

Jurisdiction ▼	County	High			Low			(Blank)			Grand Total
		NO TEST	TEST	Total	NO TEST	TEST	Total	NO TEST	TEST	Total	
MSR		630	1,107	1,836	168	776	944		5	5	2,785
WTR		3			263	949	1,212	8	15	23	4,190
JMR					43	428	471	3	6	9	1,569
SCR		1			345	721	1,066	11	22	33	2,931
MCR		4			347	257	1,104	8	12	20	4,206
NDR		1,4			463	725	2,188	29	24	53	7,136
UCR		3			361	900	1,261	8	10	18	2,913
SER					75	478	553	5	71	76	1,547
CHR		5			926	1,077	2,003	20	15	35	3,664
ETR		1			357	652	1,009		3	3	2,259
KKR		5			176	938	1,114	7	5	12	4,834
NER		3			186	363	549	8	13	21	1,646
SUL								1	7	8	946
Grand Total		5,1						108	208	316	40,626

Copy  
Delete  
Remove Total  
Show Details  
Sort Ascending  
Sort Descending  
Show Only the Top  
Show Only the Bottom  
Show As  
Commands and Options...

Normal  
Percent of Row Total  
Percent of Column Total  
Percent of Parent Row Item  
Percent of Parent Column Item  
Percent of Grand Total

# Demo Question One

TN TB High Risk Assessment Tool (RAT)											
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾							
2004	All	All	All	All							
		Risk of TB Infection(H ▾)		Test ▾							
		High			Low			(Blank)			Grand Total
		NO TEST	TEST	Total	NO TEST	TEST	Total	NO TEST	TEST	Total	
Jurisdiction ▾	County	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
MSR		22.94%	42.98%	65.92%	6.03%	27.86%	33.90%		0.18%	0.18%	100.00%
WTR		8.78%	61.74%	70.53%	6.28%	22.65%	28.93%	0.19%	0.36%	0.55%	100.00%
JMR		4.08%	65.33%	69.41%	2.74%	27.28%	30.02%	0.19%	0.38%	0.57%	100.00%
SCR		3.72%	58.79%	62.50%	11.77%	24.60%	36.37%	0.38%	0.75%	1.13%	100.00%
MCR		11.53%	61.75%	73.28%	20.14%	6.11%	26.25%	0.19%	0.29%	0.48%	100.00%
NDR		20.80%	47.80%	68.60%	20.50%	10.16%	30.66%	0.41%	0.34%	0.74%	100.00%
UCR		10.88%	45.21%	56.09%	12.39%	30.90%	43.29%	0.27%	0.34%	0.62%	100.00%
SER		6.33%	53.01%	59.34%	4.85%	30.90%	35.75%	0.32%	4.59%	4.91%	100.00%
CHR		13.89%	30.49%	44.38%	25.27%	29.39%	54.67%	0.55%	0.41%	0.96%	100.00%
ETR		5.84%	49.36%	55.20%	15.80%	28.86%	44.67%		0.13%	0.13%	100.00%
KKR		10.94%	65.76%	76.71%	3.64%	19.40%	23.05%	0.14%	0.10%	0.25%	100.00%
NER		20.41%	44.96%	65.37%	11.30%	22.05%	33.35%	0.18%	0.76%	0.94%	100.00%
SUL		9.30%	45.24%	54.55%	18.18%	26.43%	44.61%				100.00%
Grand Total		12.70%	52.32%	65.02%	13.25%	20.96%	34.21%				100.00%

8. Drag and drop 'Risk of TB Infection' from column area to Row Area

9. [ indicates where the field will drop

# Question Two

- How well does the use of Tennessee's RAT predict a positive Tuberculin Skin Test outcome?

# Demo Question Two

10. Drag Jurisdiction outside table until an 'X' forms and drop to remove from report

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾	
2004	All	All	All	All	
			Test ▾		
			NO TEST	TEST	Grand Total
Risk of TB Infection(H ▾)	Jurisdiction ▾	County	Pat Count	Pat Count	Pat Count
☐ High	☐ MSR		34.80%	65.20%	100.00%
	☐ WTR		12.45%	87.55%	100.00%
	☐ JMR		5.88%	94.12%	100.00%
	☐ SCR		5.95%	94.05%	100.00%
	☐ MCR		15.74%	84.26%	100.00%
	☐ NDR		30.32%	69.68%	100.00%
	☐ UCR		19.40%	80.60%	100.00%
	☐ SER		10.68%	89.32%	100.00%
	☐ CHR		31.30%	68.70%	100.00%
	☐ ETR		10.59%	89.41%	100.00%
	☐ KKR		14.27%	85.73%	100.00%
	☐ NER		31.23%	68.77%	100.00%
	☐ SUL		17.05%	82.95%	100.00%
	Total		19.53%	80.47%	100.00%
☐ Low	☐ MSR		17.80%	82.20%	100.00%
	☐ WTR		21.70%	78.30%	100.00%

# Demo Question Two

TN TB High Risk Assessment Tool (RAT)						
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾		
2004	All	All	All	All		
		Pos-Neg ▾				
		(Blank)	Negative	Not Read	Positive	Grand Total
Risk of TB Infection(H ▾	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	
High	32.90%	58.67%	2.76%	5.68%	100.00%	
Low	48.16%	49.83%	1.48%	0.53%	100.00%	
(Blank)	41.77%	56.01%	0.95%	1.27%	100.00%	
Grand Total	38.19%	55.62%	2.30%	3.88%	100.00%	

11. Remove the field '**Test**' and add field '**Pos-Neg**' to the column area

**'Pos-Neg'** indicates the result of a skin test.

# Demo Question Two

Enc Date ▼ Race ▼ Cou

2004 All All

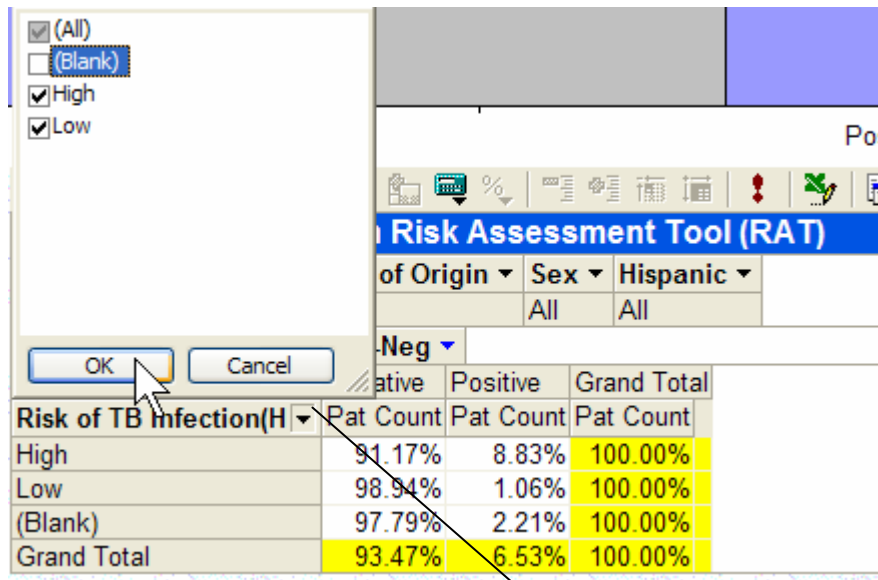
Pos-Neg ▼

	(Blank)	Negative	Not Read	Positive	Grand Total
Risk of TB Infection(H ▼)	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
High	32.90%	58.67%	2.76%	5.68%	100.00%
Low	48.16%	49.83%	1.48%	0.53%	100.00%
(Blank)	41.77%	56.01%	0.95%	1.27%	100.00%
Grand Total	38.19%	58.62%	2.30%	3.88%	100.00%

12. Click the down arrow by 'Pos-Neg' and deselect column values (Blank) and 'Not Read' to omit from report



# Demo Question Two



Pos

Risk Assessment Tool (RAT)

of Origin ▾ Sex ▾ Hispanic ▾

All All

Neg ▾

	Relative	Positive	Grand Total
Risk of TB Infection(H) ▾	Pat Count	Pat Count	Pat Count
High	91.17%	8.83%	100.00%
Low	98.94%	1.06%	100.00%
(Blank)	97.79%	2.21%	100.00%
Grand Total	93.47%	6.53%	100.00%

13. Click the down arrow by 'Risk of TB' and deselect row values to omit from report

# Demo Question Two

TN TB High Risk Assessment Tool (RAT)				
Enc Date ▾	Race ▾	Country of Origin ▾	Sex ▾	Hispanic ▾
2004	All	All	All	All
			Pos-Neg ▾	
			Positive	Negative
			Grand Total	
Risk of TB Infection(H ▾	Pat Count	Pat Count	Pat Count	
High	8.83%	91.17%	100.00%	
Low	1.06%	98.94%	100.00%	
Grand Total	6.56%	93.44%	100.00%	

14. Drag and drop data value to rearrange columns

# Question Three

- How do the non-USA born High Risk and Positive skin tests break down by country, ethnicity, and gender?

or

- What country, ethnicity, and gender contribute the most positive TST high risk cases?

# Demo Question Three

**High**

**Low**

**TN TB H**

Enc Date ▼ Jurisdiction ▼

2004 All

**Pos-Neg** ▼

Positive Negative Grand Total

Risk of TB Infection(H ▼) Pat Count Pat Count Pat Count

High	1,500	15,496	16,996
Low	74	6,924	6,998
Grand Total	1,574	22,420	23,994

**ool (RAT)**

Hispanic ▼ Sex ▼

All All

15. Click down arrow by 'Pos-Neg' field and remove all checks except 'Positive'

14. Click in any data area and then right click and select 'Show as → Normal' to show actual numbers

16. Click 'OK' to continue

# Demo Question Three

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾	Se
2004	All	All	All	All	All
		Pos-Neg ▾			
		Positive	Grand Total		
Risk of TB Infection(H ▾	Pat Count	Pat Count			
High	1,500	1,500			
Low	74	74			
Grand Total	1,574	1,574			

17. Repeat steps 15 and 16 and select the 'High Risk' row in 'Risk of TB Infection'

18. Ok now we are going to investigate these 1,500 individuals

TN TB High Risk Assessment Tool (R				
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hisp
2004	All	All	All	All
		Pos-Neg ▾		
		Positive	Grand Total	
Risk of TB Infection(H ▾	Pat Count	Pat Count		
High	1,500	1,500		
Grand Total	1,500	1,500		

# Demo Question Three

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾	Sex ▾
2004	All	All	All	All	All
		Pos-Neg ▾			
		Positive	Grand Total		
Risk of TB Infection(H ▾	Pat Count	Pat Count			
High	1,500	1,500			
Grand Total	1,500	1,500			

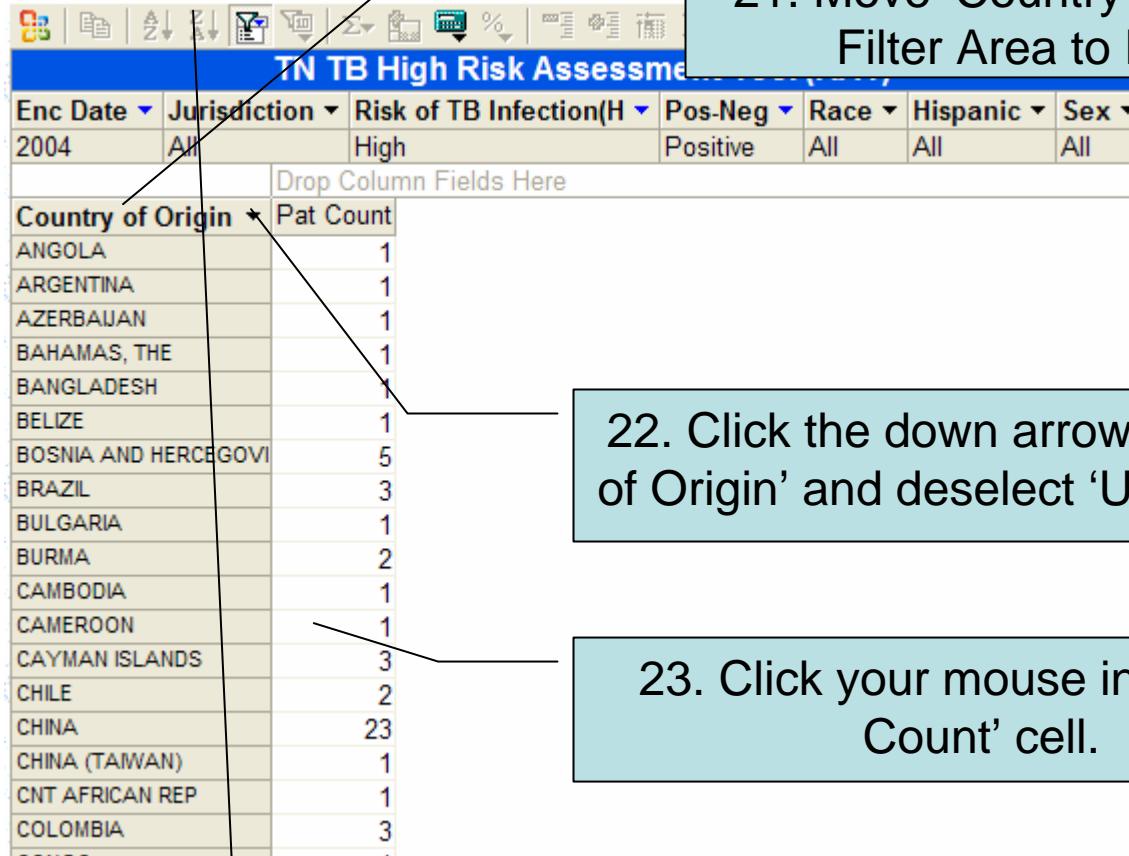
20. Our new population

19. Now move both 'Risk of TB Infection' and 'Pos-Neg' to Filter Area

TN TB High Risk Assessment			
Enc Date ▾	Jurisdiction ▾	Risk of TB Infection(H ▾	Pos-Neg ▾
2004	All	High	Positive
Drop Column Fields Here			
Pat Count			
1,500			

# Demo Question Three

21. Move 'Country of Origin' from Filter Area to Row Area



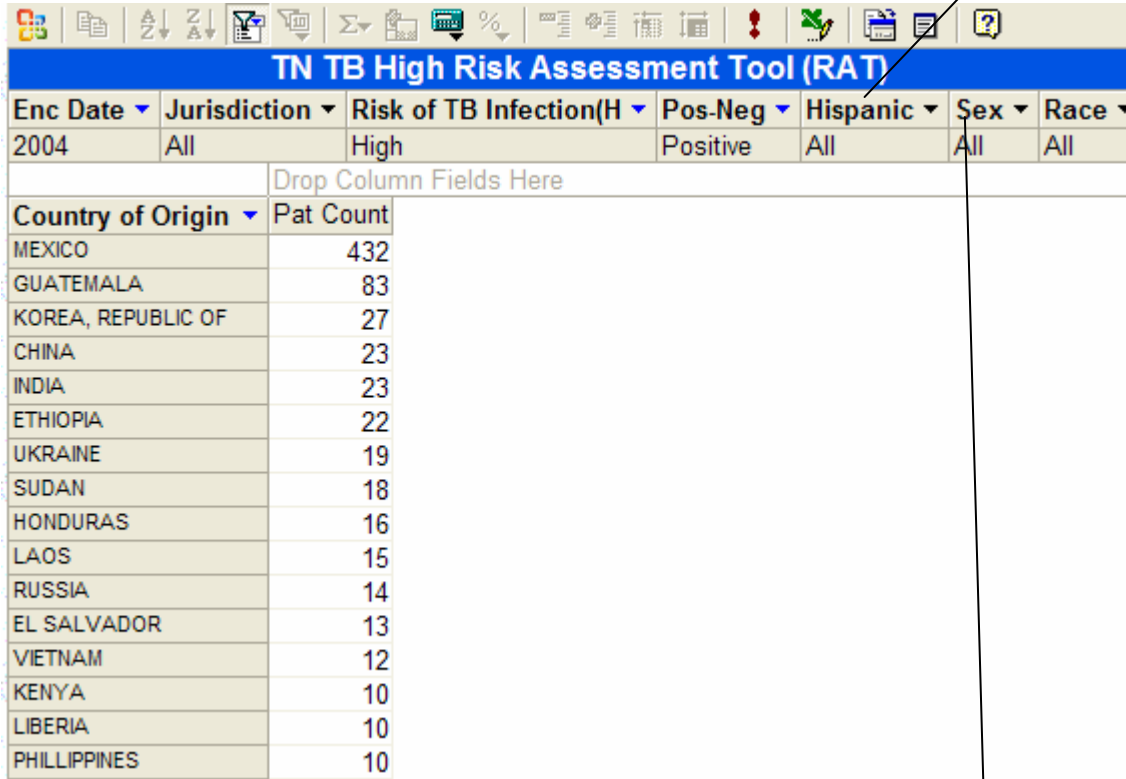
Enc Date ▼	Jurisdiction ▼	Risk of TB Infection(H ▼	Pos-Neg ▼	Race ▼	Hispanic ▼	Sex ▼
2004	All	High	Positive	All	All	All
Drop Column Fields Here						
Country of Origin ▼	Pat Count					
ANGOLA	1					
ARGENTINA	1					
AZERBAIJAN	1					
BAHAMAS, THE	1					
BANGLADESH	1					
BELIZE	1					
BOSNIA AND HERCEGOVI	5					
BRAZIL	3					
BULGARIA	1					
BURMA	2					
CAMBODIA	1					
CAMEROON	1					
CAYMAN ISLANDS	3					
CHILE	2					
CHINA	23					
CHINA (TAIWAN)	1					
CNT AFRICAN REP	1					
COLOMBIA	3					

22. Click the down arrow by 'Country of Origin' and deselect 'United States'

23. Click your mouse in any 'Pat Count' cell.

24. Click the 'Sort Descending' button on Toolbar.

# Demo Question Three



Enc Date ▾	Jurisdiction ▾	Risk of TB Infection(H ▾	Pos-Neg ▾	Hispanic ▾	Sex ▾	Race ▾
2004	All	High	Positive	All	All	All
Drop Column Fields Here						
Country of Origin ▾	Pat Count					
MEXICO	432					
GUATEMALA	83					
KOREA, REPUBLIC OF	27					
CHINA	23					
INDIA	23					
ETHIOPIA	22					
UKRAINE	19					
SUDAN	18					
HONDURAS	16					
LAOS	15					
RUSSIA	14					
EL SALVADOR	13					
VIETNAM	12					
KENYA	10					
LIBERIA	10					
PHILLIPPINES	10					

25. Move 'Hispanic' from Filter Area to Column Area

26. Move 'Sex' from Filter Area to Column Area to the right of 'Hispanic'



# Demo Question Three

TN TB High Risk Assessment Tool (RAT)				
Enc Date ▾	Jurisdiction ▾	Risk of TB Infection(H ▾	Pos-Neg ▾	Race ▾
2004	All	High	Positive	All
Hispanic ▾ Sex ▾				
⊕ (Blank) ⊕ N ⊕ Y Grand Total				
Country of Origin ▾	Pat Count	Pat Count	Pat Count	Pat Count
MEXICO	2	9	421	432
GUATEMALA	1	1	81	83
KOREA, REPUBLIC OF		27		27
CHINA	3	20		23
INDIA		23		23
ETHIOPIA		22		22
UKRAINE		19		19
SUDAN		18		18
HONDURAS			16	16
LAOS		15		15
RUSSIA	1	13		14
EL SALVADOR		1	12	13
VIETNAM		12		12
KENYA		10		10
LIBERIA		10		10
PHILLIPPINES		10		10

27. Right click on the word 'Hispanic' in Column Area and select 'Expand Items'

# Demo Question Three

TN TB High Risk Assessment Tool (RAT)

Enc Date ▾	Jurisdiction ▾	Risk of TB Infection(H ▾	Pos-Neg ▾	Race ▾							
2004	All	High	Positive	All							
		Hispanic ▾	Sex ▾								
		<div> <input type="checkbox"/> (Blank) <input type="checkbox"/> N <input type="checkbox"/> Y </div>						Grand Total			
		F	M	Total	F	M	Total	F	M	Total	
Country of Origin ▾	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
MEXICO	1	1	2	5	4	9	244	177	421	432	
GUATEMALA		1	1	1		1	52	29	81	83	
KOREA, REPUBLIC OF				13	14	27				27	
CHINA	1	2	3	11	9	20				23	
INDIA				11	12	23				23	
ETHIOPIA				8	14	22				22	
UKRAINE				10	9	19				19	
SUDAN				4	14	18				18	
HONDURAS							12	4	16	16	
LAOS				10	5	15				15	
RUSSIA	1		1	11	2	13				14	
EL SALVADOR					1	1	9	3	12	13	
VIETNAM				7	5	12				12	
KENYA				4	6	10				10	
LIBERIA				4	6						
PHILLIPPINES				6	4						

27. Right click on the word

27. Right click on the word 'Sex' in Column Area and uncheck 'Subtotal'



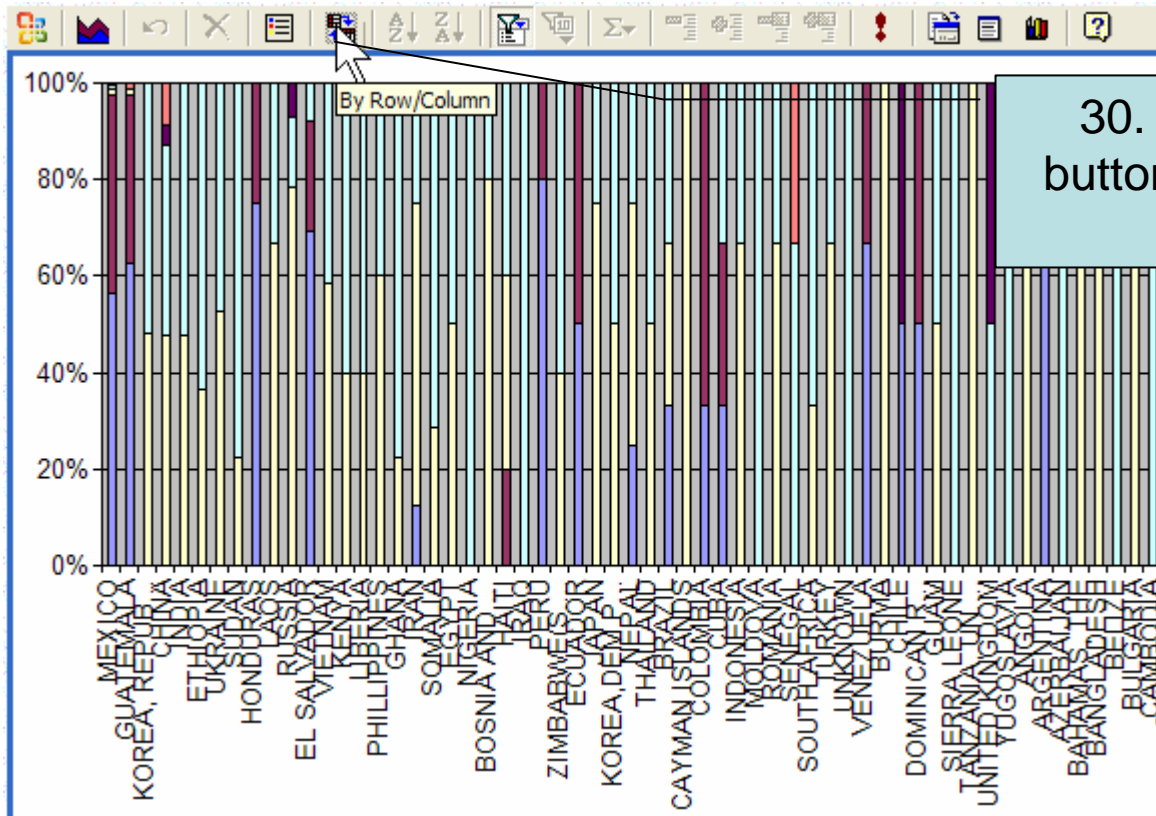
# Demo Question Three

TN TB High Risk Assessment Tool (RAT)							
Enc Date ▼	Jurisdiction ▼	Risk of TB Infection(H ▼		Pos-Neg ▼	Race ▼		
2004	All	High		Positive	All		
		Hispanic ▼		Sex ▼			
		Y		N		(Blank)	
		F	M	F	M	F	M
Country of Origin ▼	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
MEXICO	244	177	5	4	1	1	432
GUATEMALA	52	29	1			1	83
KOREA, REPUBLIC OF			13	14			27
CHINA			11	9	1	2	23
INDIA			11	12			23
ETHIOPIA			8	14			22
UKRAINE			10	9			19
SUDAN			4	14			18
HONDURAS	12	4					16
LAOS			10	5			15
RUSSIA			11	2	1		14
EL SALVADOR	9	3			1		13
VIETNAM			7	5			12
KENYA			4	6			10
LIBERIA			4	6			10
PHILLIPPINES			6	4			10

28. TAH DAH !!!

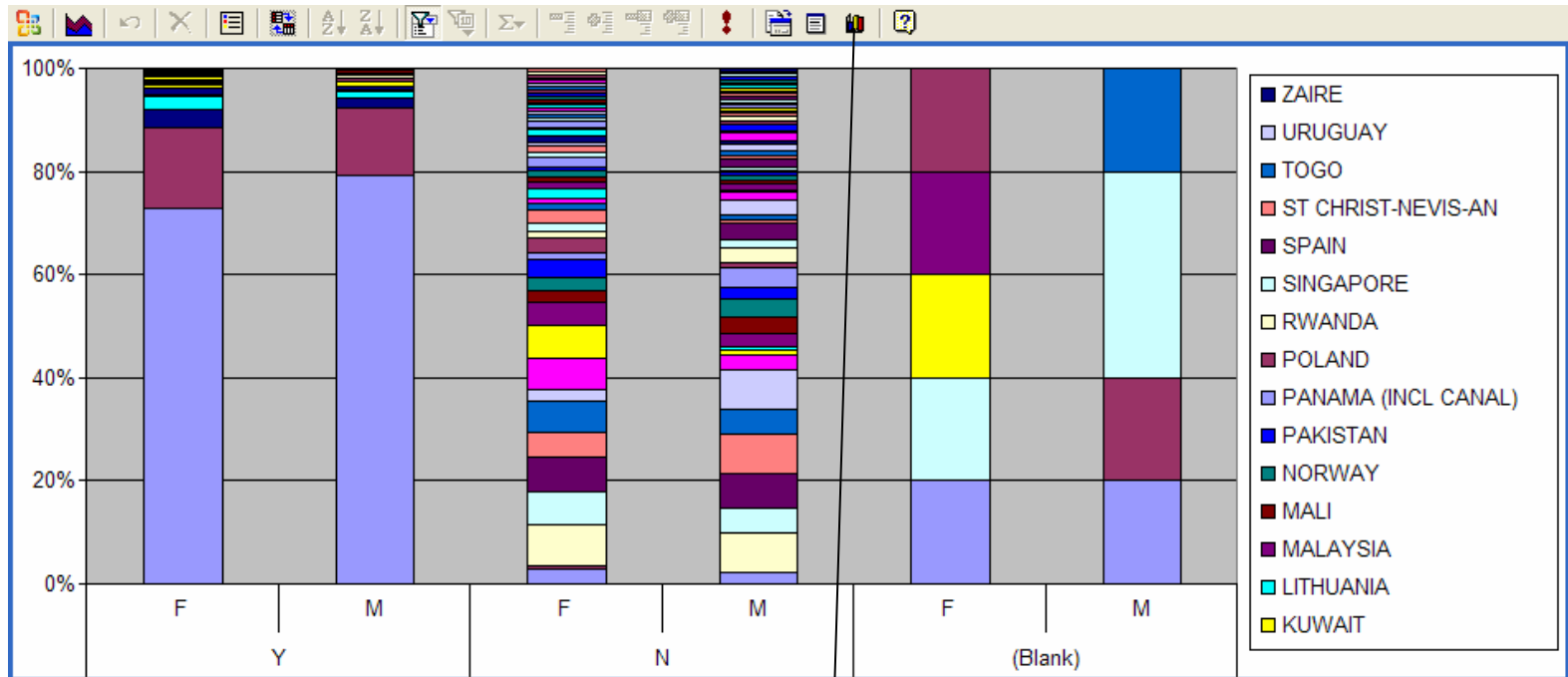
# Demo Question

29. Now let us make the chart tell us something



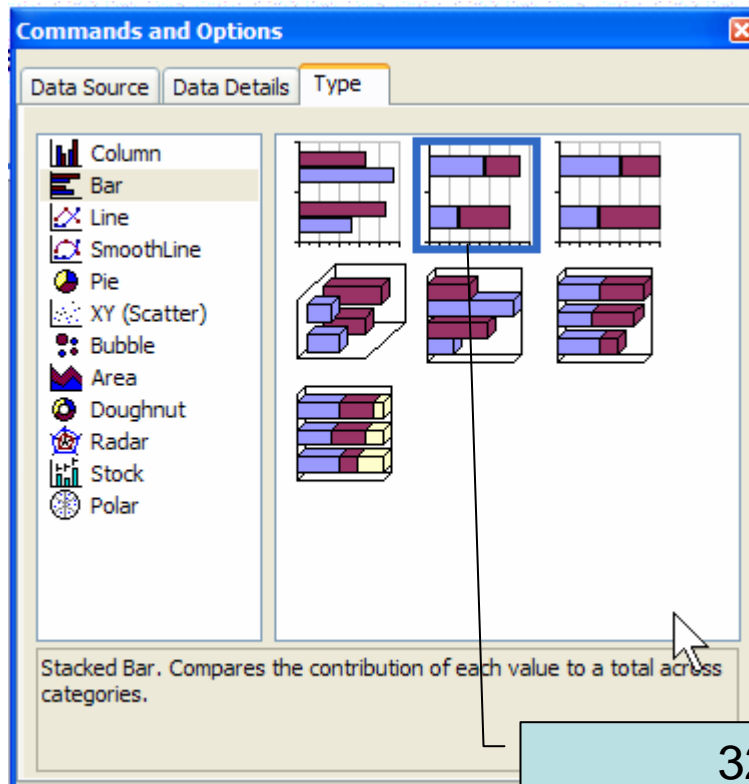
30. Click the 'By Row/Column' button on chart toolbar to change direction of chart

# Demo Question Three



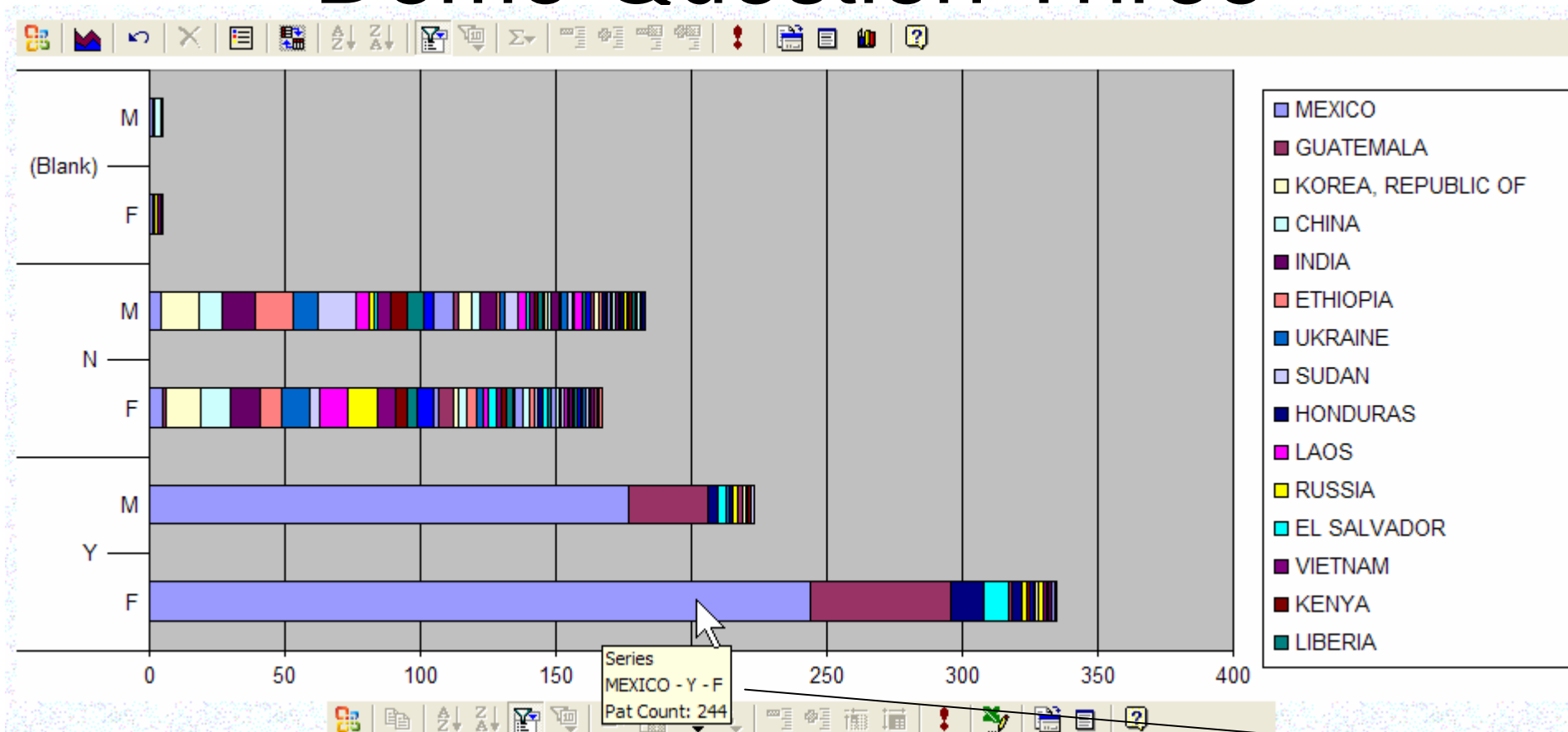
31. Click the Chart Wizard button.

# Demo Question Three



- 32. Click the 'Type' tab
- 33. Select 'Bar' from left window
- 33. Click the 'Stacked Bar' in right window
- 33. Close wizard window

# Demo Question Three

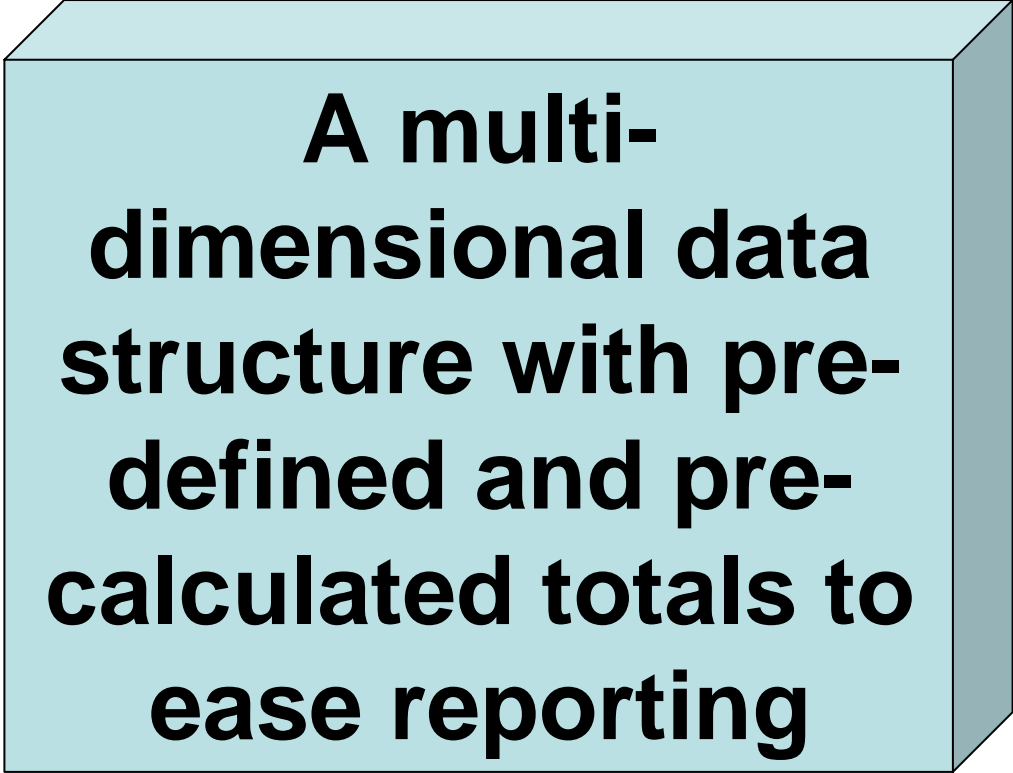


34. It is now clear that Hispanic Females from Mexico make up the largest single population of High Risk Positives in 2004 in Tennessee.



# What is a Cube?

# What is a Cube?



**A multi-  
dimensional data  
structure with pre-  
defined and pre-  
calculated totals to  
ease reporting**

# What is a Cube?

Note – A data structure is a computer representation of data that is “seen” through software, in this case a web browser. For instance the actual structure of an Excel spreadsheet’s data and its representation are two separate things.

# The Official Definition

“On-Line Analytical Processing ([OLAP](#)) is a way of organizing data to fit the way you analyze and manage it, so that less time and effort is needed to create your reports. When you create an OLAP cube from a query, you turn the flat set of records into a structured hierarchy, or cube, that allows reports to focus on the desired level of detail. You also predefine the summary values for the reports, which speeds up report calculation.” – MS Product Literature

# Pros and Cons

- Pros –
  - Inexpensive to implement
    - \$0.00 if you have Microsoft Office and FrontPage
  - Friendly interface, easy to use for
    - Users
    - System Administrators and
    - Programmers

# Pros and Cons

- Pros –
  - Much more efficient than spreadsheet or pivot table reporting
  - Easier to refresh with current data than other products
    - When users open a report, they always have the most current data in the Cube. Refreshing is not required.

# Pros and Cons

- Cons –
  - Tempting to use even when not applicable
  - Can create an appearance of great accuracy that may not necessarily be true
  - Easy to reflect user biases in reporting
  - Very difficult to fully automate
    - Will always require some human interaction

# Pros and Cons – A Warning

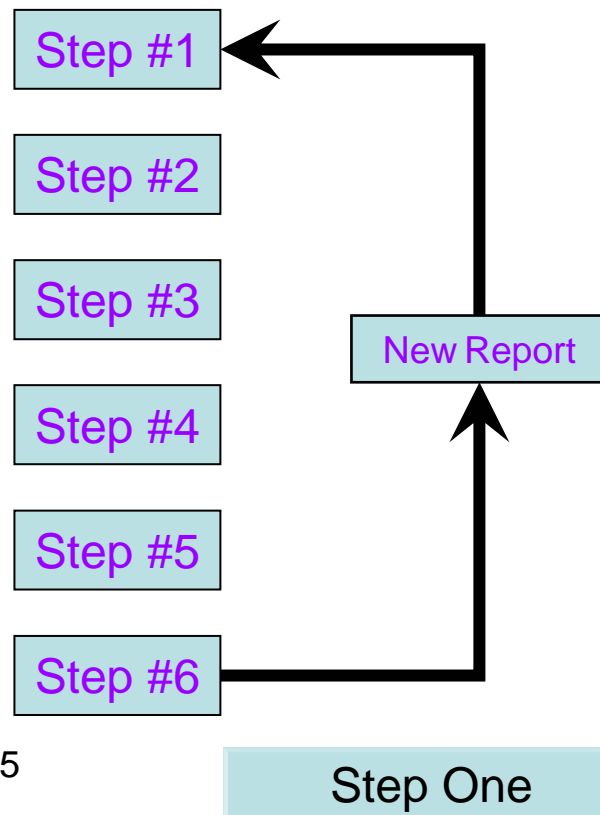
## **WARNING**

Since this product can put a lot of information on users desktop, think about your policies concerning who can provide data outside your agency and who or what should check the accuracy of that data prior to release!!!

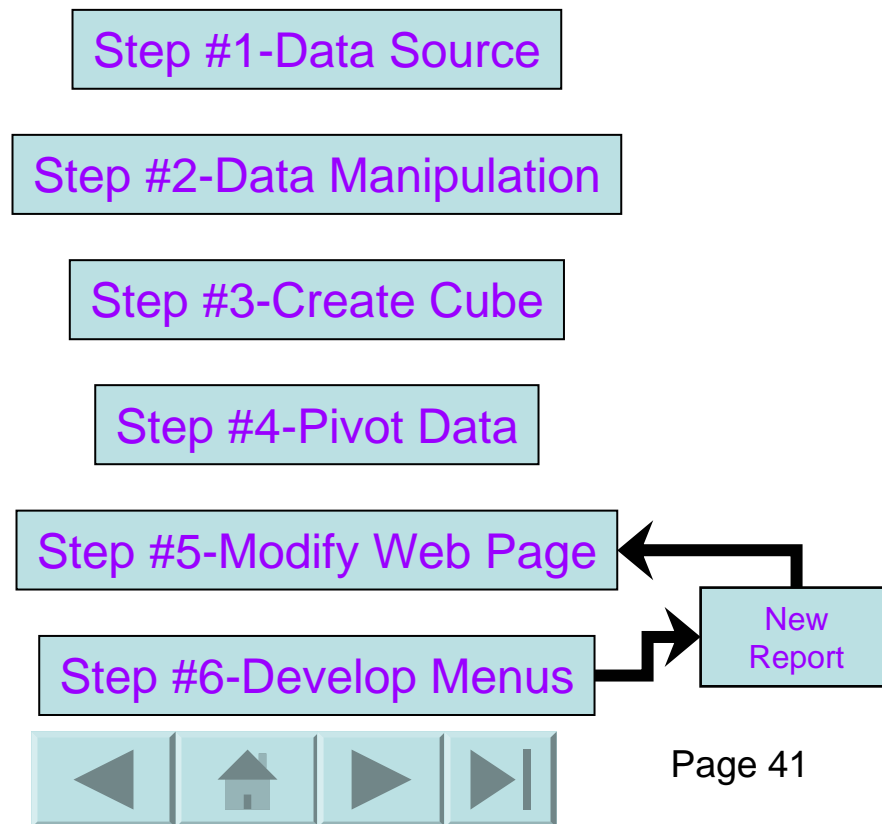


# Report Generation Paradigms

Old Paradigm – always start all over



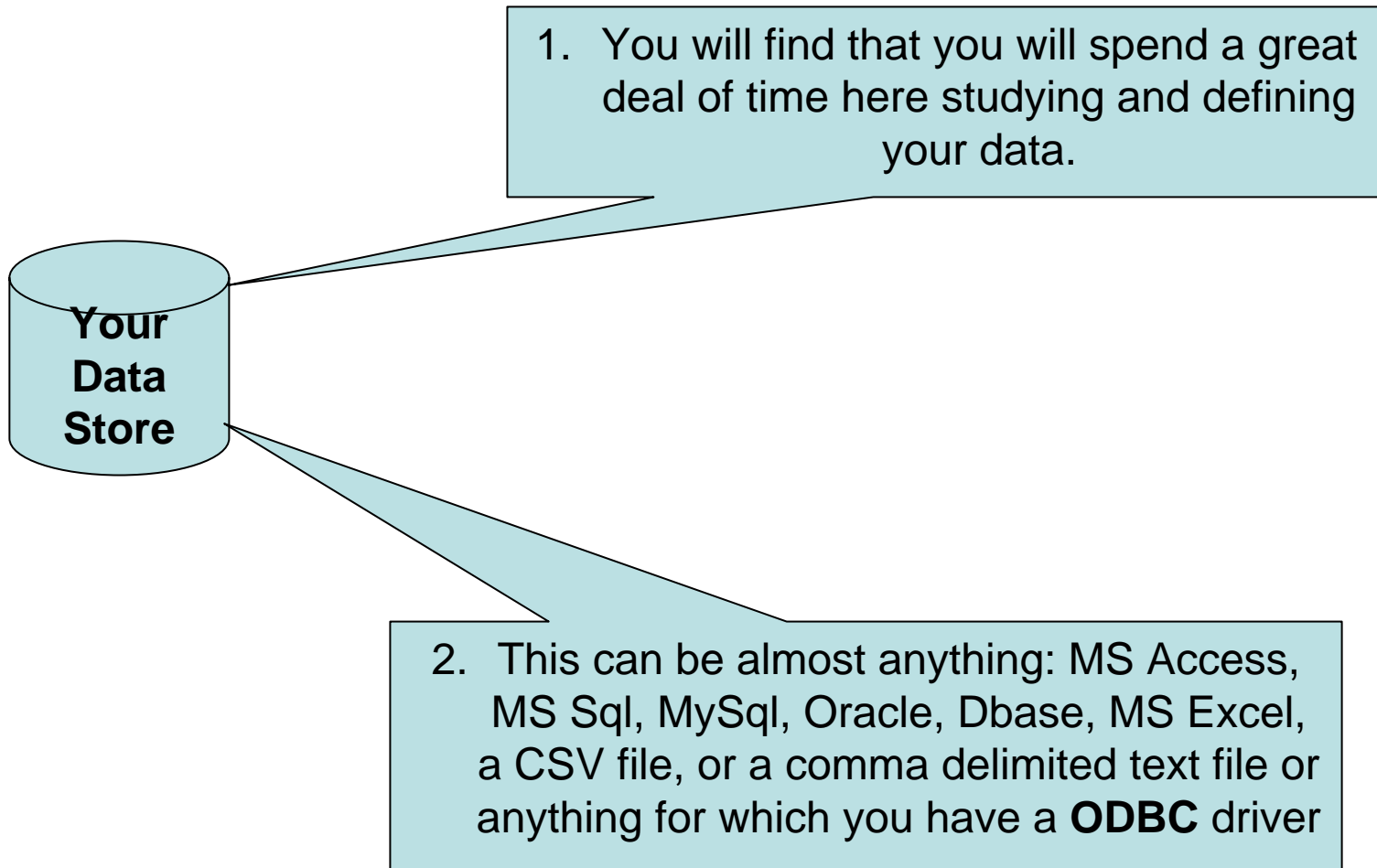
New Paradigm – Just change the current visualization



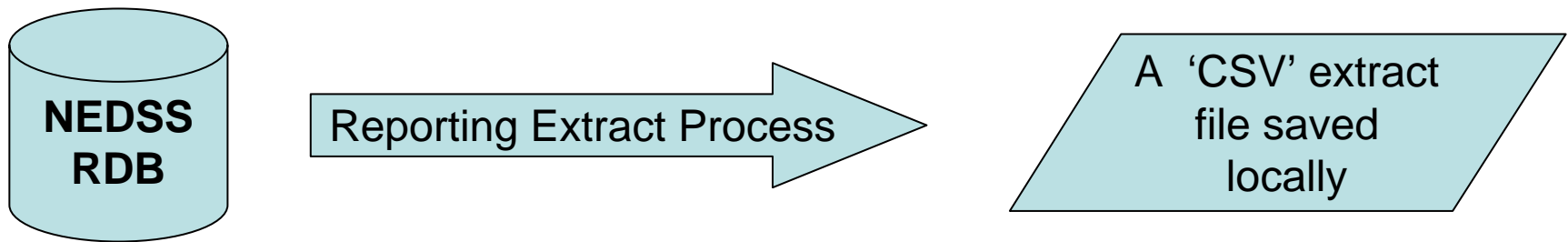
# Step 1: Data Source Identification and Research

- Collect and document your metadata, i.e., gather facts about the data
- Compose meaningful data element names
- Define and understand data elements to be counted or summed
- Identify redundant data elements
- Identify related data elements (Jurisdiction Code and Jurisdiction Name)
- Eliminate unique individual identifiers

# Step 1: Data Source Identification and Research



# Step 1: Data Store



# Step 1: Data Store

Microsoft Excel - pivotdata.csv

Type a question for help

File Edit View Insert Format Tools Data Window Help Acrobat

Arial 10 B I U

C2 C

	A	B	C	D	E	F	G	H	I	J	K
	Condition	Case Status	Investigation Status Code	City	County	State	Jurisdiction	Jurisdiction	MMWR W	MMWR Year	
1	Hepatitis A, acute	C	C				PHR 7	48005	33	2004	
2	Bacterial meningitis, other	C	C				PHR 7	48005	33	2004	
3	Haemophilus influenzae, invasive	C	C	clifton		Texas	PHR 7	48005	33	2004	
4	Bacterial meningitis, other	C	C			Texas	PHR 7	48005	33	2004	
5	Campylobacteriosis	C	C	bastrop	Bastrop Co	Texas	PHR 7	48005	33	2004	
6	Measles (Rubeola)	C	C	bastrop	Bastrop Co	Texas	PHR 7	48005	33	2004	
7	Hepatitis A, acute	C	C	Temple		Texas	Bell	48016	33	2004	
8	Campylobacteriosis	C	C				PHR 7	48005	33	2004	
9	Campylobacteriosis	C	C	Muleshoe	Lubbock Co	Texas	PHR 1	48001	33	2004	
10	Hepatitis A, acute	C	C	bastrop	Bastrop Co	Texas	PHR 7	48005	33	2004	
11	Haemophilus influenzae, invasive	C	C	LaGrange	Fayette Co	Texas	PHR 7	48005	33	2004	
12	Salmonellosis	C	C	Ropesville	Hockley Co	Texas	PHR 1	48001	33	2004	
13	Hepatitis A, acute	C	C	LaGrange	Fayette Co	Texas	PHR 7	48005	33	2004	
14	Measles (Rubeola)	C	C	RAYMONT	Willacy Co	Texas	PHR 11	48008	35	2004	
15	Bacterial meningitis, other	C	C	Amarillo	Potter Cou	Texas	Amarillo	48010	35	2004	
16	Shigellosis	C	C	beaumont	Jefferson Co	Texas	PHR 6-5	48004	35	2004	
17	Shigellosis	C	C	beaumont	Jefferson Co	Texas	Beaumont	48015	35	2004	
18	Hepatitis A, acute	C	C	beaumont	Jefferson Co	Texas	Beaumont	48015	35	2004	
19	Haemophilus influenzae, invasive	C	O	Harlingen	Cameron Co	Texas	Harlingen	48021	35	2004	
20	Haemophilus influenzae, invasive	C	C	Harlingen	Cameron Co	Texas	Harlingen	48021	35	2004	
21	Hepatitis A, acute	C	C				Cameron	48021	35	2004	
22	Bacterial meningitis, other	C	C	SanBenito	Cameron Co	Texas	Cameron	48021	35	2004	
23	Campylobacteriosis	C	C				Cameron	48021	35	2004	
24	Measles (Rubeola)	C	C	Harlingen	Cameron Co	Texas	Cameron	48021	35	2004	
25	Measles (Rubeola)	C	C	Little Town	Cameron Co	Texas	PHR 11	48008	35	2004	
26	Measles (Rubeola)	C	C	Corpus Ch	Nueces Co	Texas	Corpus	48026	35	2004	
27	Salmonellosis	C	C	Cedar Park	Travis Cou	Texas	Williamson	48072	35	2004	
28	Varicella (Chickenpox)	C	C	Cedar Park	Travis Cou	Texas	Williamson	48072	35	2004	
29	Hepatitis	C	O	California	Bell Count	Texas	PHR 7	48005	35	2004	
30	Salmonellosis	C	C	Brownsville	Cameron Co	Texas	Cameron	48021	35	2004	
31											

pivotdata/

Ready

This is Test Data

Saved as PivotData.CSV

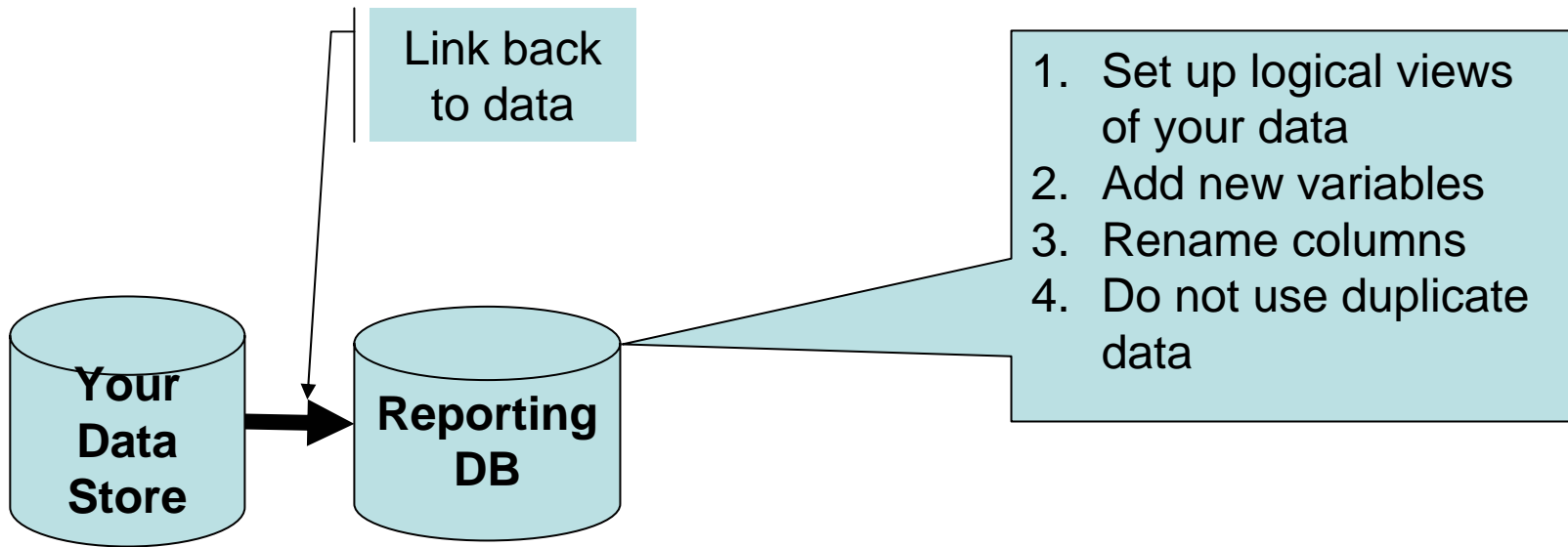
# Step 2: Data Manipulation

- Supply meaningful data column names
- Eliminate redundant or identifier columns
- Add new variables – examples
  - If necessary, add a column purely for counting or summing
  - Join jurisdiction code and jurisdiction name
  - Subtract client DOB from the date of test to get client age at time of test
- This is where you lay the stage to make the data in the columns 'pretty'

# Step 2: Data Manipulation

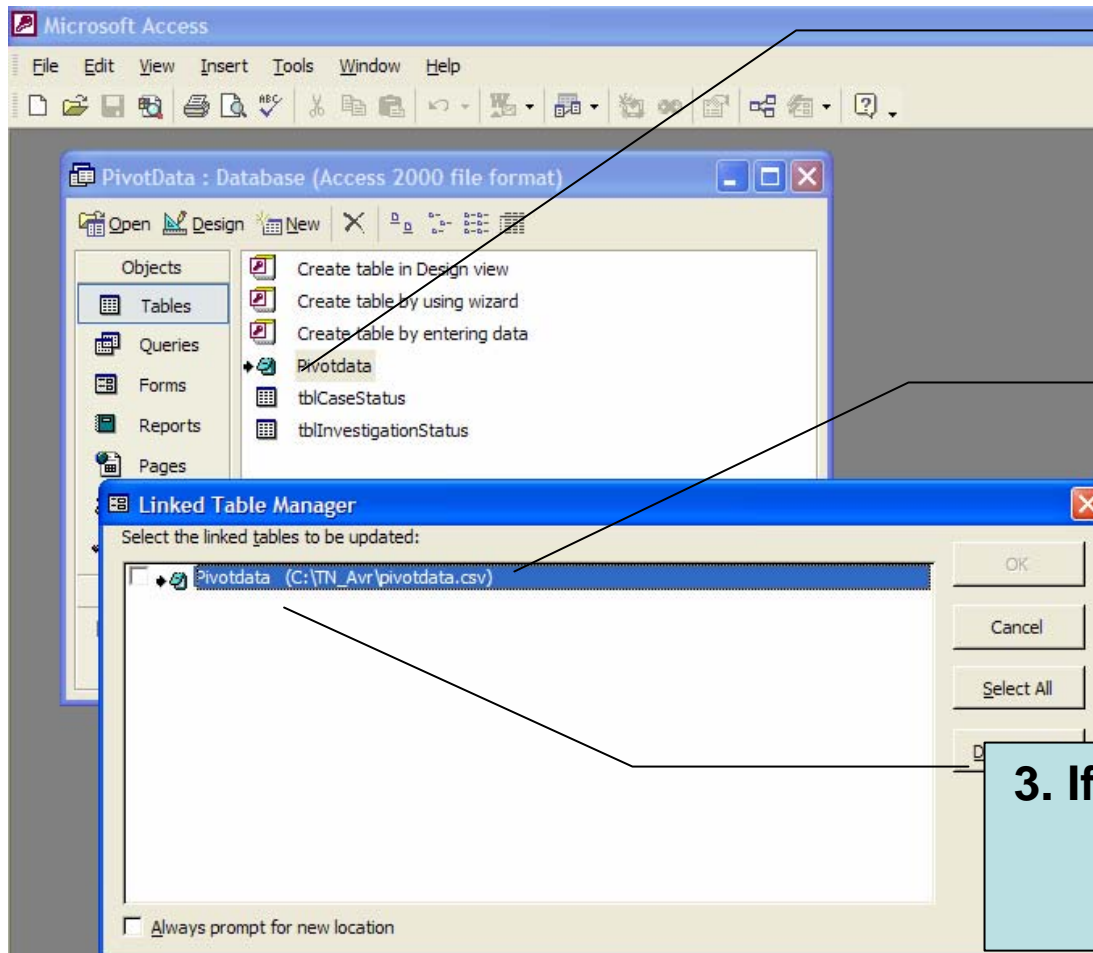
Please note that the above process lets us transform the data from format found in the original source to a more **logical** and **useful** view of the data for later use.

# Step 2: Data Manipulation





# Step 2: Data Manipulation



1. Our data table

2. Linked to the .CSV extract from our data source

3. If the underlying extract changes, the DB changes!!

# Step 2: Data Manipulation

1. Query or View of data that makes the data more useful for reporting

2. Concatenate Case Status and Status Description.

3. City → Make sure first letter is capitalized.

Field:	Condition	CaseStatus: IIf(Piv...	InvestigationStatus	NewCity: UCase(Mid(Pivotdata!City, ...	County	State	Jurisdiction
Table:	Pivotdata				Pivotdata	Pivotdata	Pivotdata
Sort:							
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:							
or:							

# Step 2: Data Manipulation

Microsoft Access - [qryPivotTableQuery : Select Query]

Type a question for help

	Condition	CaseStatus	InvestigationStatus	NewCity	County	State	Jurisdiction	Jurisdiction	MMWR	MMWR Year
►	Hepatitis A, acute	C-Confirmed	C-Closed				PHR 7	48005	33	2004
	Bacterial meningitis, other	C-Confirmed	C-Closed				PHR 7	48005	33	2004
	Haemophilus influenzae, inva:	C-Confirmed	C-Closed	Clifton		Texas	PHR 7	48005	33	2004
	Bacterial meningitis, other	C-Confirmed	C-Closed	Clifton		Texas	PHR 7	48005	33	2004
	Campylobacteriosis	C-Confirmed	C-Closed	Bastrop	Bastrop County	Texas	PHR 7	48005	33	2004
	Measles (Rubeola)	C-Confirmed	C-Closed	Bastrop	Bastrop County	Texas	PHR 7	48005	33	2004
	Hepatitis A, acute	C-Confirmed	C-Closed	Temple		Texas	Bell	48016	33	2004
	Campylobacteriosis	C-Confirmed	C-Closed				PHR 7	48005	33	2004
	Campylobacteriosis	C-Confirmed	C-Closed	Muleshoe	Lubbock County	Texas	PHR 1	48001	33	2004
	Hepatitis A, acute	C-Confirmed	C-Closed	Bastrop	Bastrop County	Texas	PHR 7	48005	33	2004
	Haemophilus influenzae, inva:	C-Confirmed	C-Closed	LaGrange	Fayette County	Texas	PHR 7	48005	33	2004
	Salmonellosis	C-Confirmed	C-Closed	Ropesville	Hockley County	Texas	PHR 1	48001	33	2004
	Hepatitis A, acute	C-Confirmed	C-Closed	LaGrange	Fayette County	Texas	PHR 7	48005	33	2004
	Measles (Rubeola)	C-Confirmed	C-Closed	RAYMONDVI	Willacy County	Texas	PHR 11	48008	35	2004
	Bacterial meningitis, other	C-Confirmed	C-Closed	Amarillo	Potter County	Texas	Amarillo	48010	35	2004
	Shigellosis	C-Confirmed	C-Closed	Beaumont	Jefferson Count	Texas	PHR 6-5	48004	35	2004

**NOTE:**  
THIS IS THE CONSTRUCT THAT WILL BE  
USED TO BUILD OUR OLAP CUBE

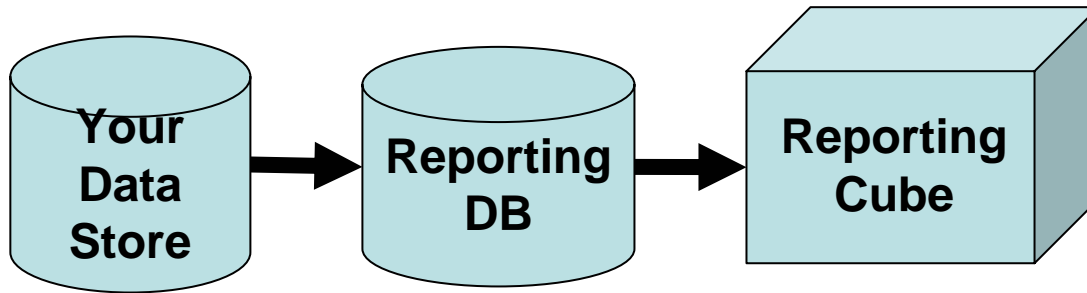
# Step 3: Create the Cube

- Start MSQRY32.exe (find here: <drive>:\Program Files\Microsoft Office)
- Access the logical view you just created
- Make sure you have identified the focus columns for the reporting structure
- Save as an OLAP Cube

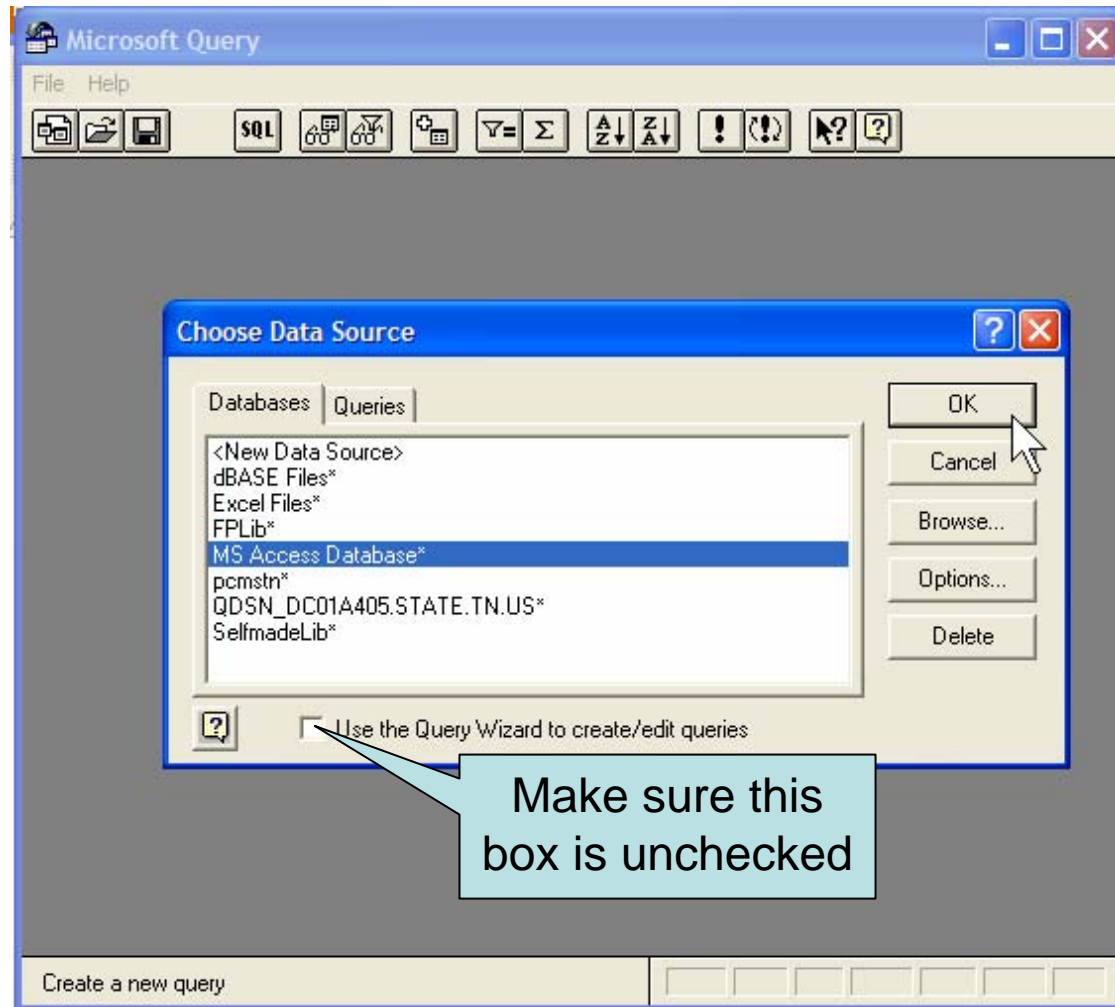


MSQRY32.EXE

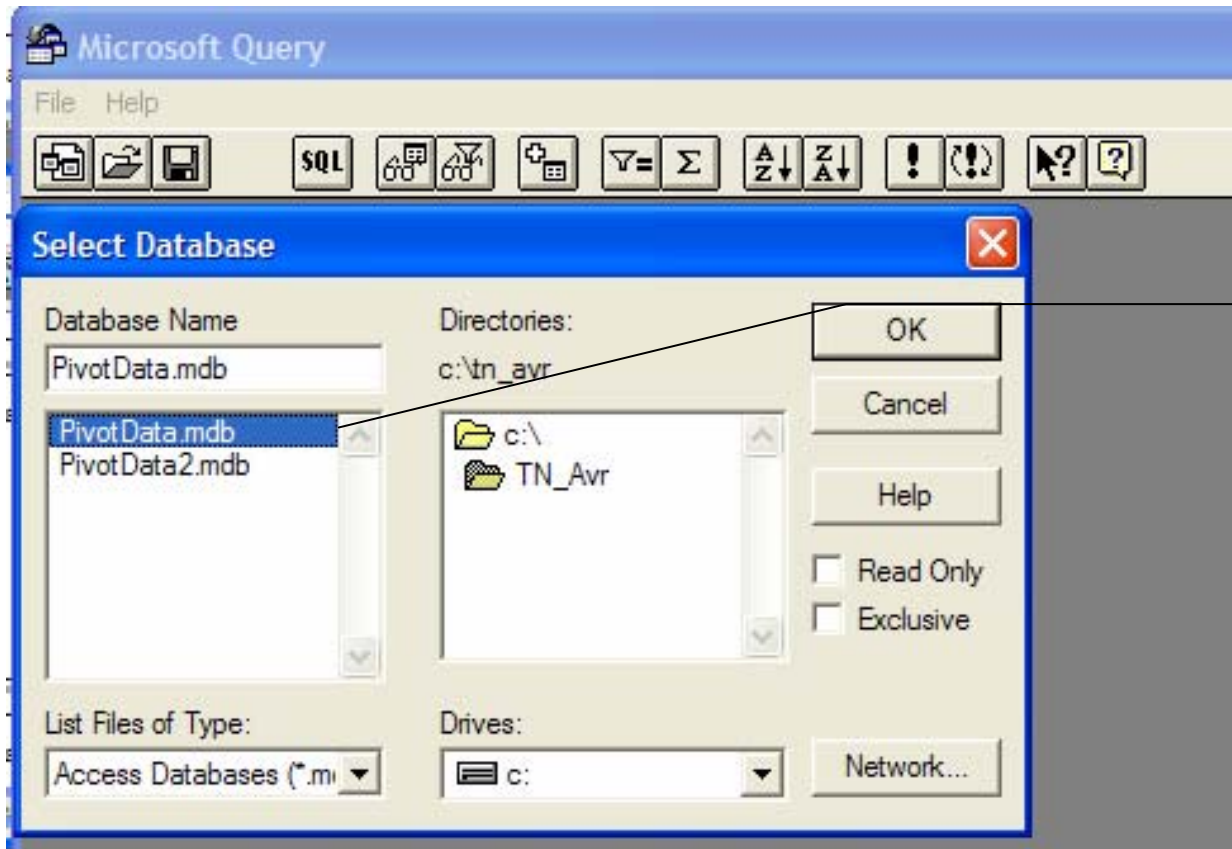
# Step 3: Create the Cube



# Step 3: Create the Cube

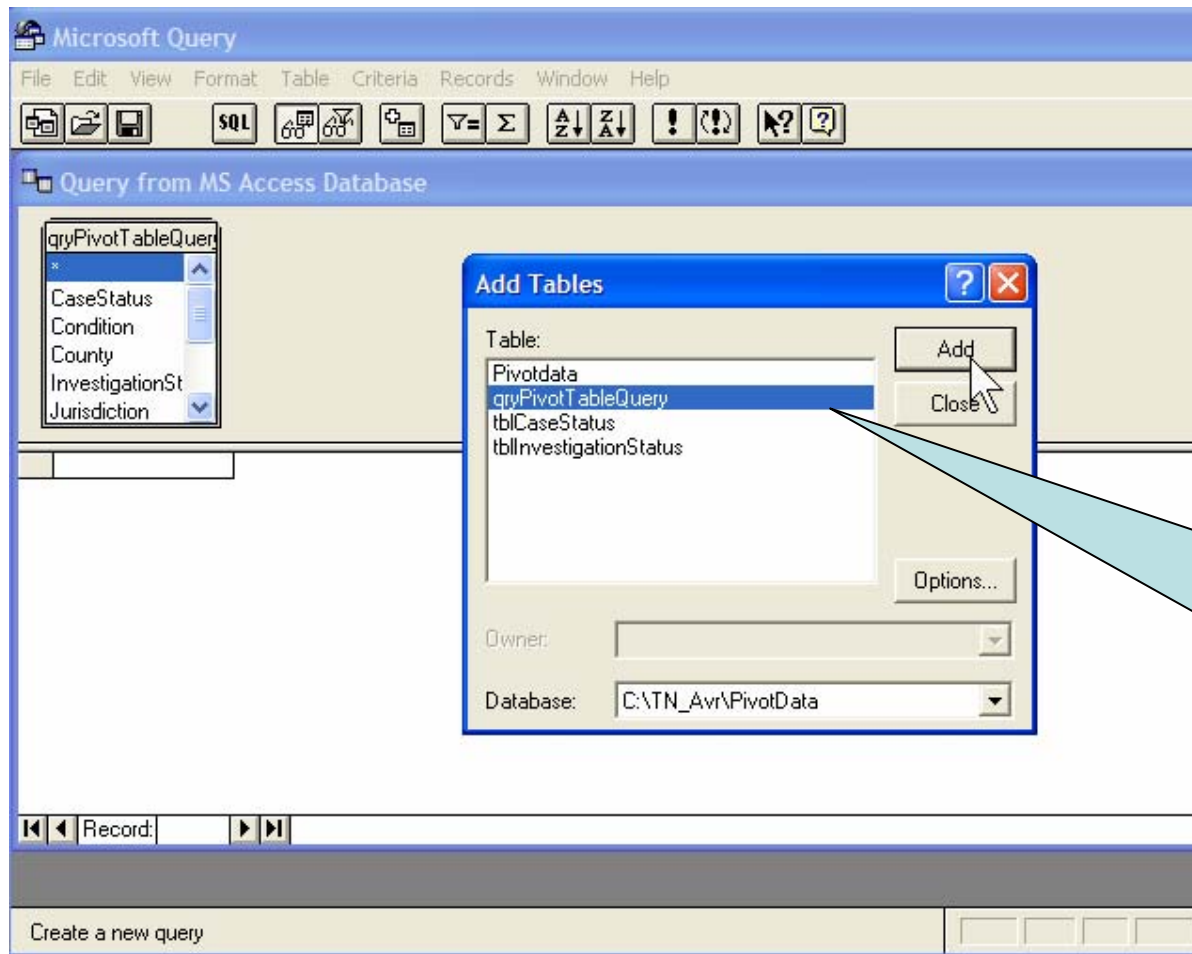


# Step 3: Create the Cube



The database  
we just  
worked on

# Step 3: Create the Cube





# Step 3: Create the Cube

Microsoft Query - [Query from MS Access Database]

File Edit View Format Table Criteria Records Window Help

SQL

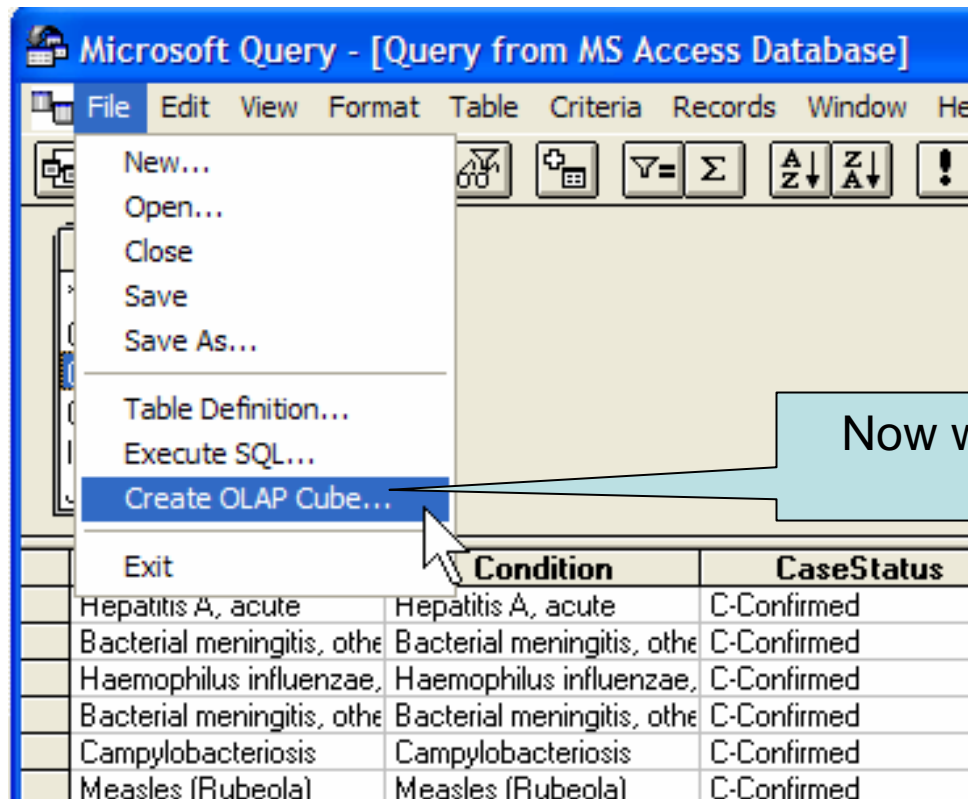
qryPivotTableQuery

CaseStatus  
Condition  
County  
InvestigationStatus  
Jurisdiction

Condition	Condition	CaseStatus	InvestigationStatus	NewCity
Hepatitis A, acute	Hepatitis A, acute	C-Confirmed	C-Closed	
Bacterial meningitis, othe	Bacterial meningitis, othe	C-Confirmed	C-Closed	
Haemophilus influenzae,	Haemophilus influenzae,	C-Confirmed	C-Closed	Clifton
Bacterial meningitis, othe	Bacterial meningitis, othe	C-Confirmed	C-Closed	Clifton
Campylobacteriosis	Campylobacteriosis	C-Confirmed	C-Closed	Bastrop
Measles (Rubeola)	Measles (Rubeola)	C-Confirmed	C-Closed	Bastrop
Hepatitis A, acute	Hepatitis A, acute	C-Confirmed	C-Closed	Temple
Campylobacteriosis	Campylobacteriosis	C-Confirmed	C-Closed	
Campylobacteriosis	Campylobacteriosis	C-Confirmed	C-Closed	Muleshoe
Hepatitis A, acute	Hepatitis A, acute	C-Confirmed	C-Closed	Bastrop
Haemophilus influenzae,	Haemophilus influenzae,	C-Confirmed	C-Closed	LaGrange
Salmonellosis	Salmonellosis	C-Confirmed	C-Closed	Ropesville
Hepatitis A, acute	Hepatitis A, acute	C-Confirmed	C-Closed	LaGrange
Measles (Rubeola)	Measles (Rubeola)	C-Confirmed	C-Closed	RAYMONDVILLE
Bacterial meningitis, othe	Bacterial meningitis, othe	C-Confirmed	C-Closed	Amarillo
Shigellosis	Shigellosis	C-Confirmed	C-Closed	Beaumont
Shigellosis	Shigellosis	C-Confirmed	C-Closed	Beaumont

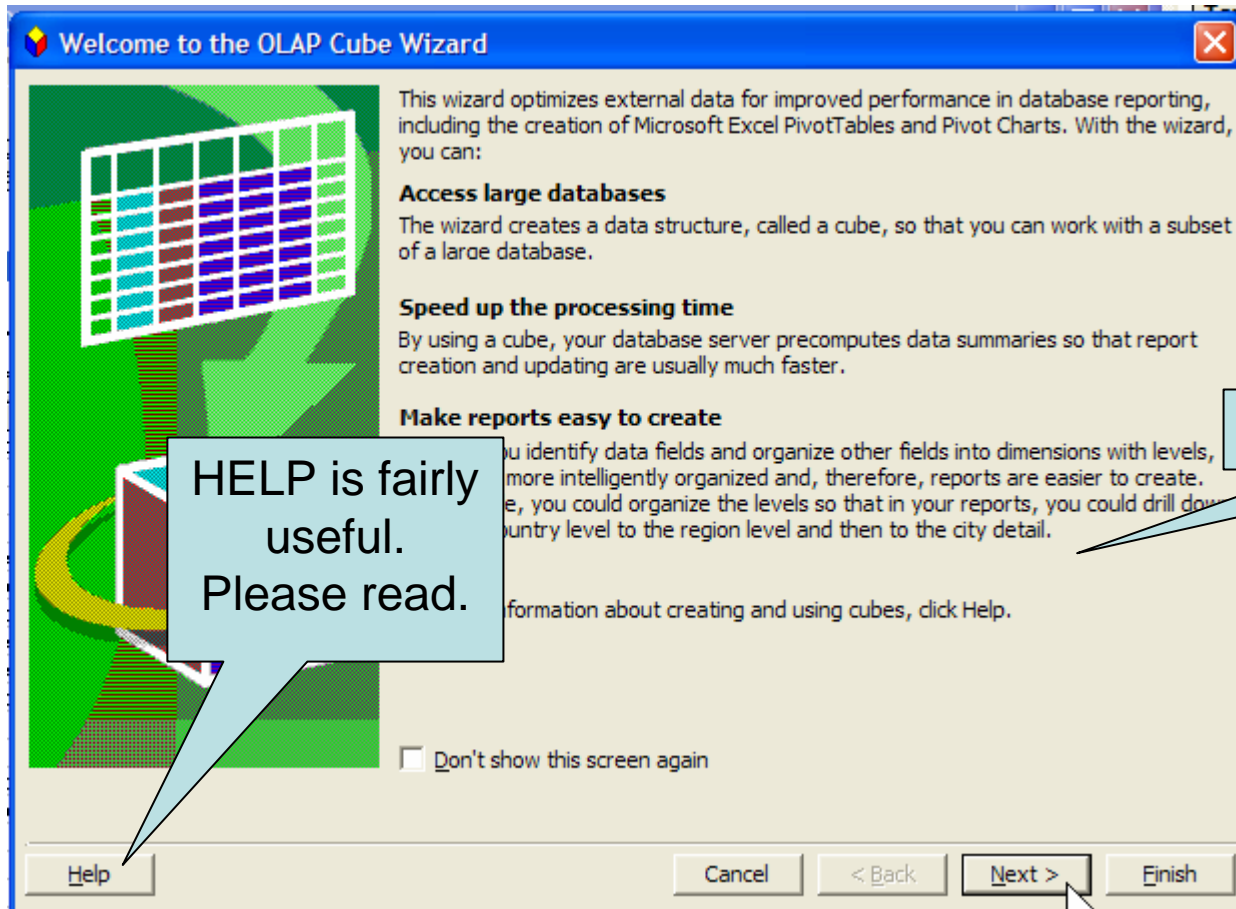
Record: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 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1621 1622 1623 1624 1625 1626 1627 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644 1645 1646 1647 1648 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1670 1671 1672 1673 1674 1675 1676 1677 1678 1679 1680 1681 1682 1683 1684 1685 1686 1687 1688 1689 1690 1691 1692 1693 1694 1695 1696 1697 1698 1699 1700 1701 1702 1703 1704 1705 1706 1707 1708 1709 1710 1711 1712 1713 1714 1715 1716 1717 1718 1719 1720 1721 1722 1723 1724 1725 1726 1727 1728 1729 1730 1731 1732 1733 1734 1735 1736 1737 1738 1739 1740 1741 1742 1743 1744 1745 1746 1747 1748 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497

# Step 3: Create the Cube



Now we create our OLAP Cube

# Step 3: Create the Cube



# Step 3: Create the Cube

**OLAP Cube Wizard Step 1 of 3**

Select the source fields you want to make available as summarized data fields, and then click a function in the Summarize by column for each field.

<input checked="" type="checkbox"/> Source field	Summarize by	Data field name
<input type="checkbox"/> Jurisdiction Code		
<input type="checkbox"/> MMWR Week		
<input type="checkbox"/> MMWR Year		
<input checked="" type="checkbox"/> Expr1000	Count	Condition Count
<input type="checkbox"/> Condition		
<input type="checkbox"/> CaseStatus		
<input type="checkbox"/> InvestigationStatus		
<input type="checkbox"/> NewCity		
<input type="checkbox"/> County		
<input type="checkbox"/> State		
<input type="checkbox"/> Jurisdiction		

Help Cancel < Back Next > Finish

In Step One, we define what we are counting or summing

Rename Column Header

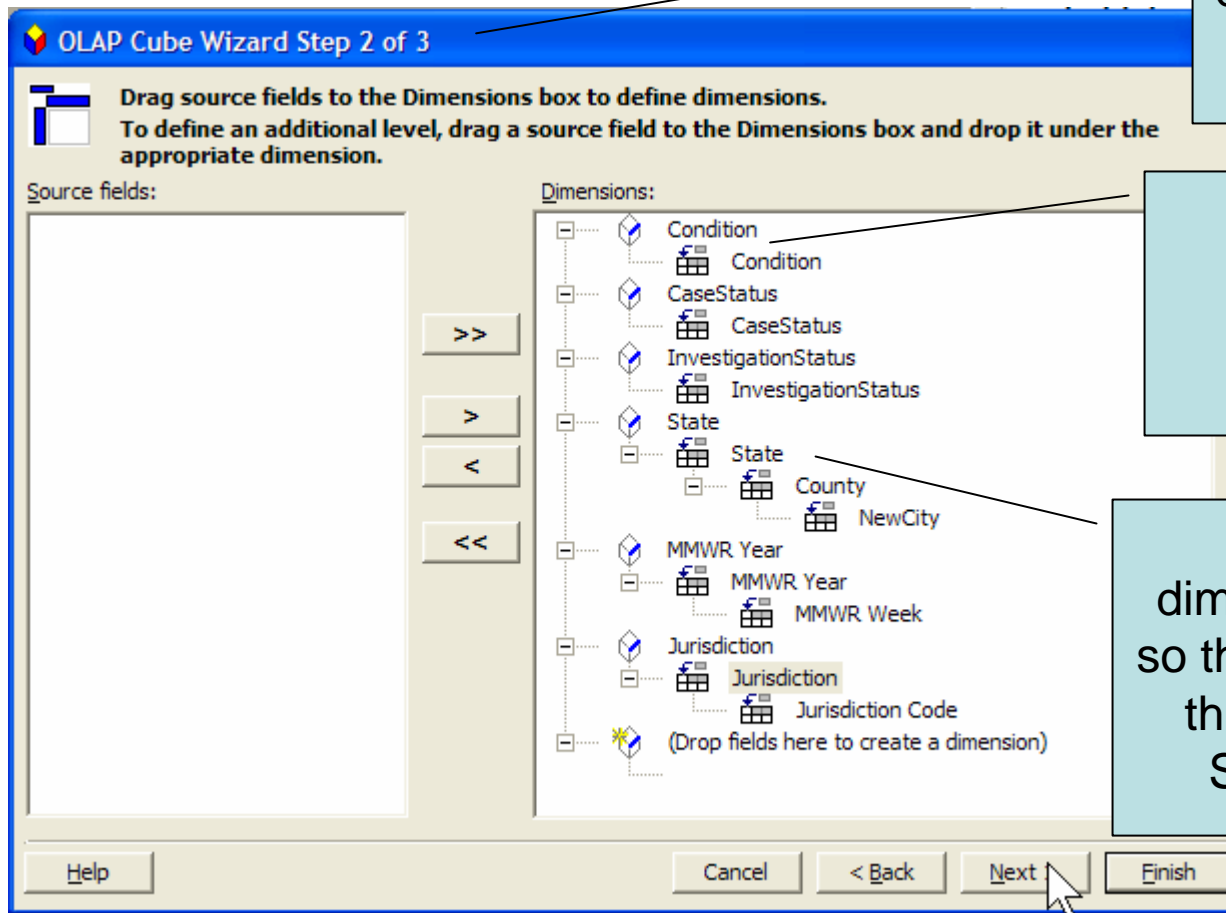
Second incident of field 'Condition'

# Step 3: Create the Cube

In Step Two, we define the dimensions of the report

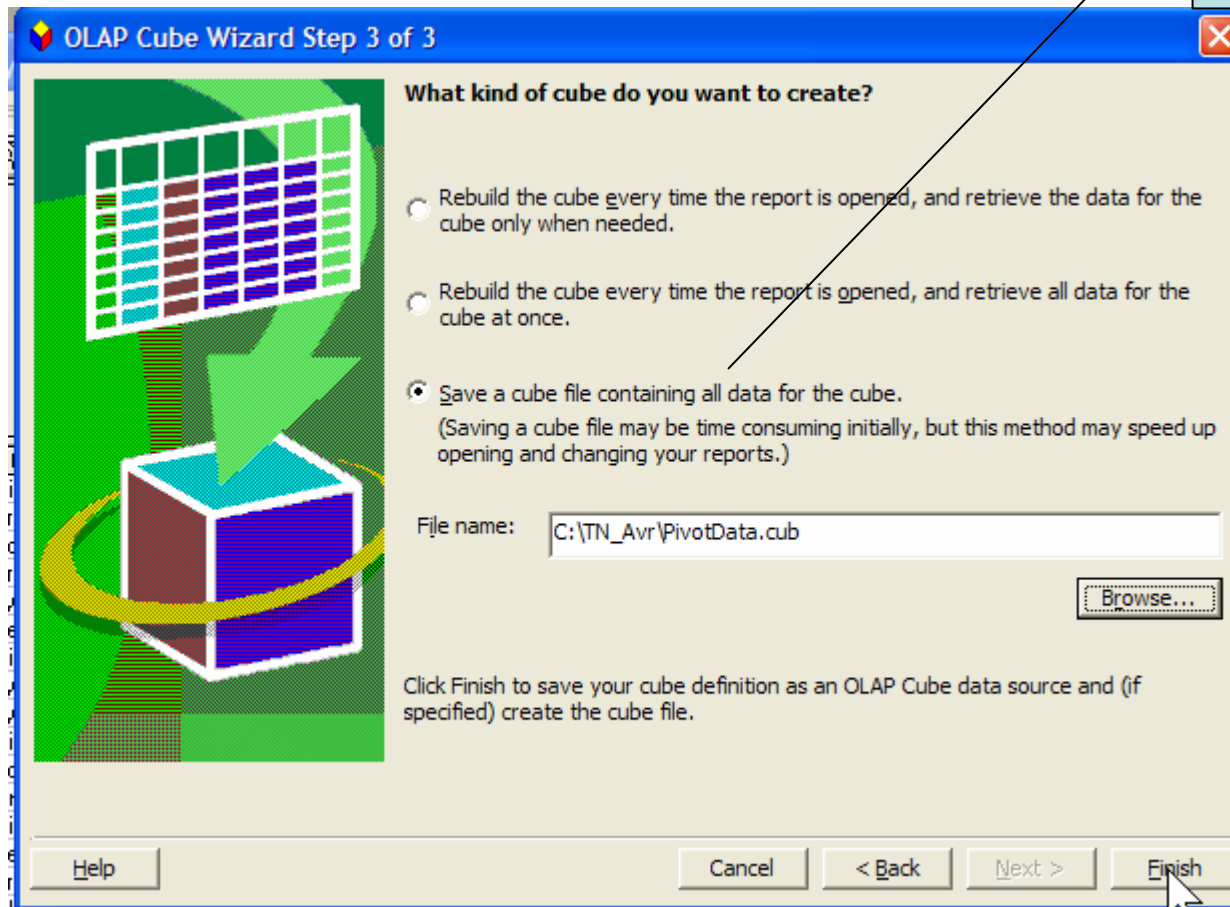
Note that some dimensions are standalone, like 'Condition'

Note that some dimensions are stacked so the user can drill down through the data, like State, County, City



# Step 3: Create the Cube

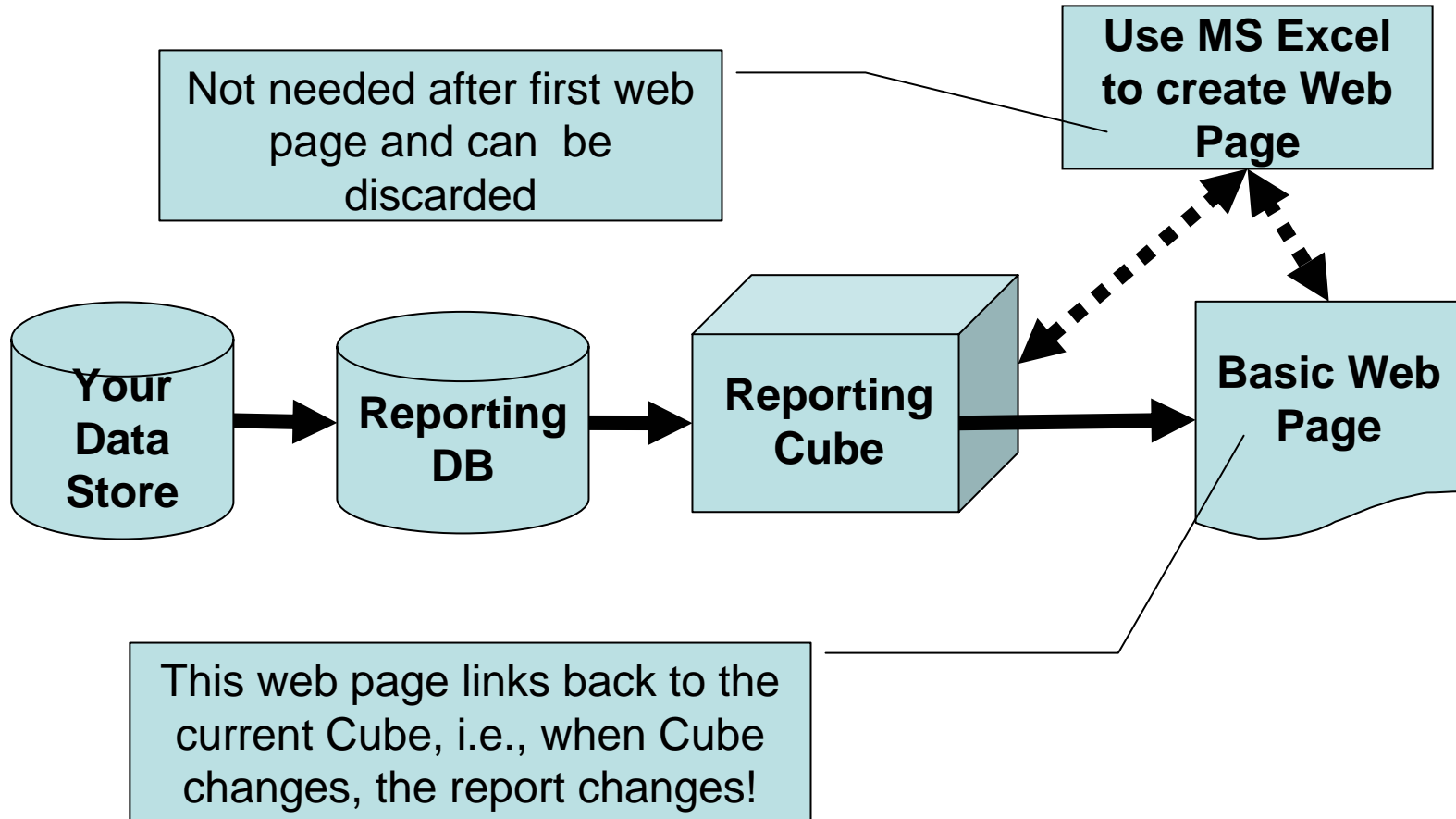
Offline Cube



# Step 4: Pivot the Data

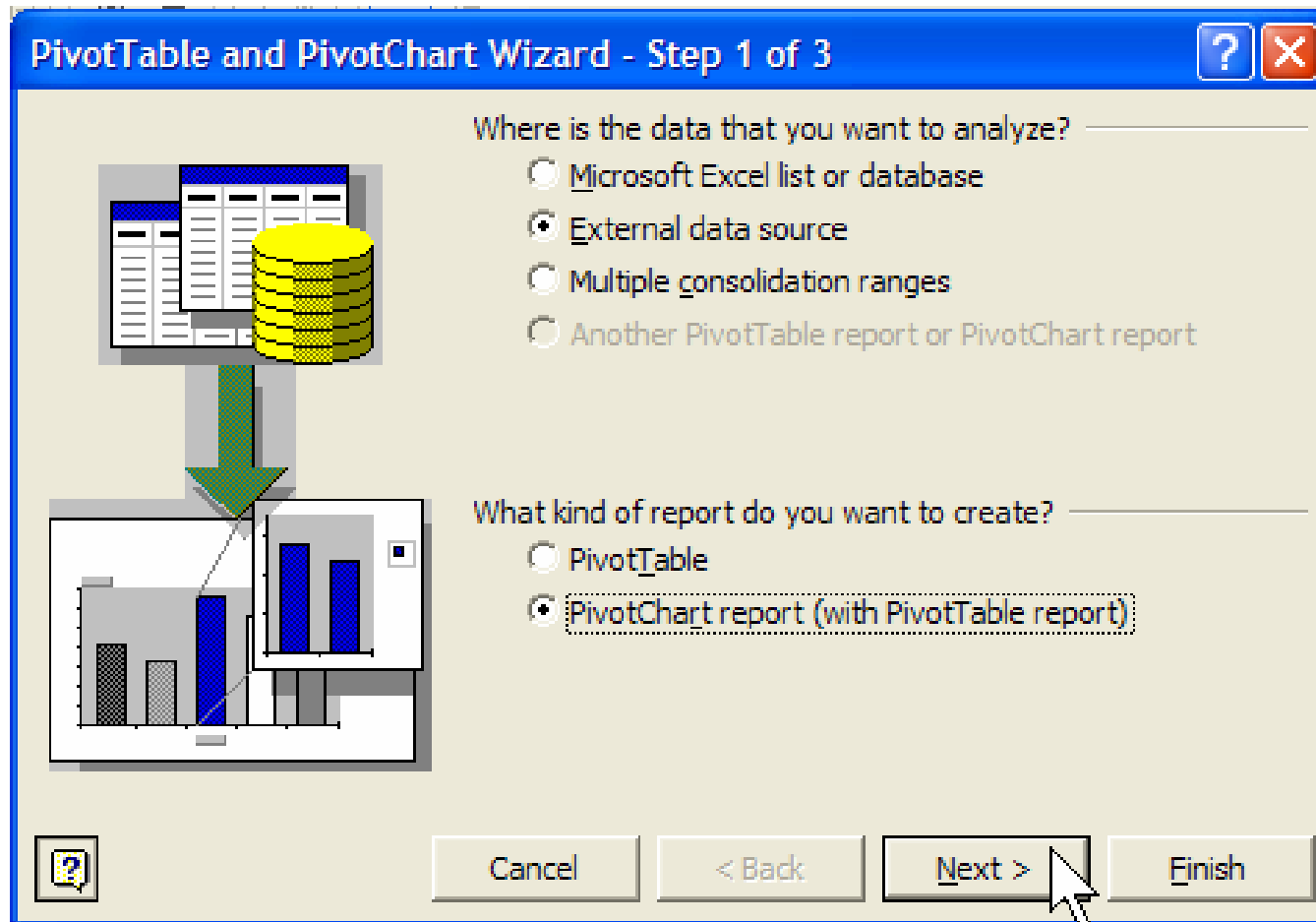
- Use MS Excel
  - Use external data source
  - Create a PivotChart (with PivotTable report)
  - Save the PivotChart (NOT the Pivot Table!) as a web page
  - Close Excel and discard the Excel pivot table

# Step 4: Pivot the Data

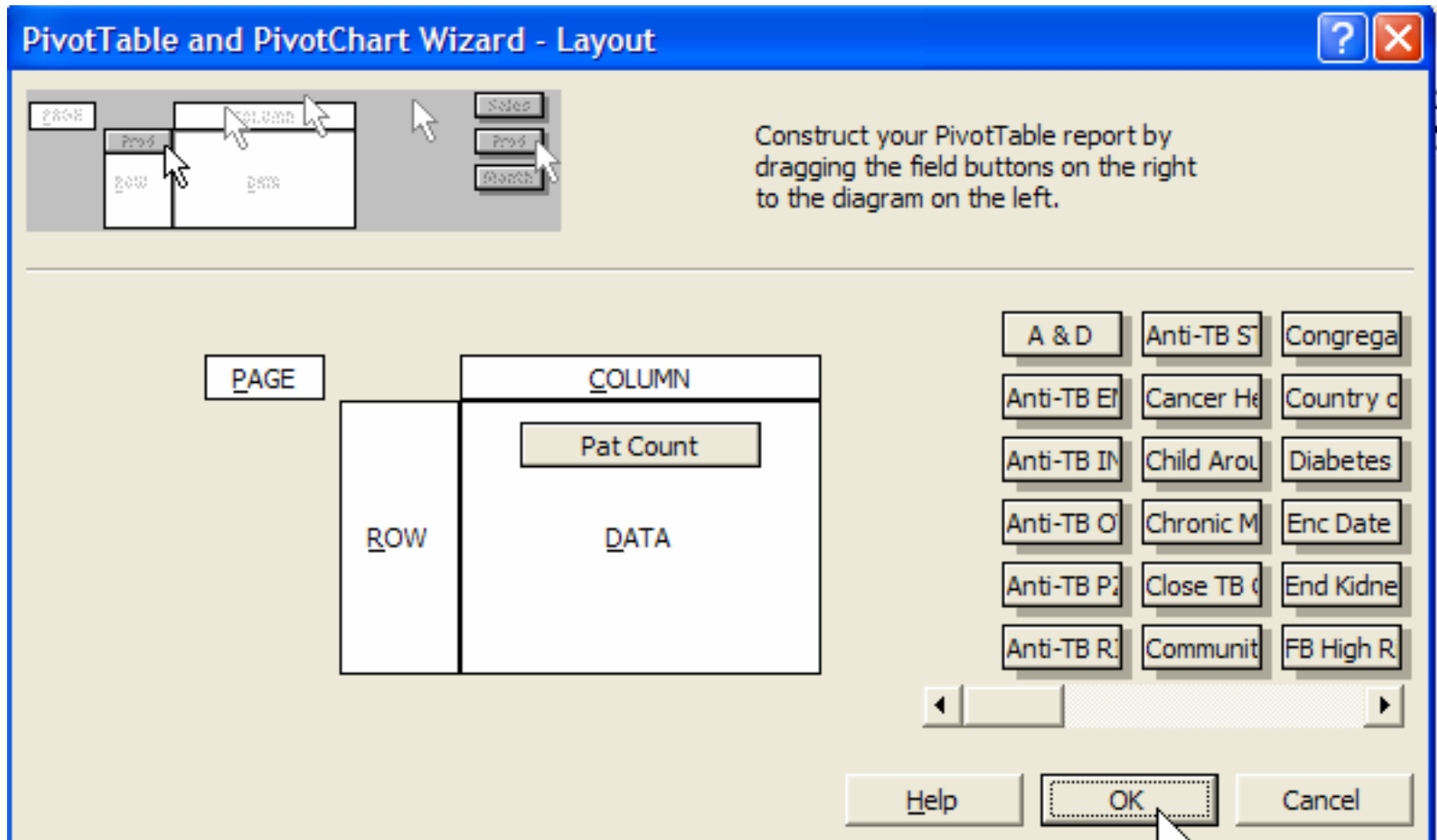




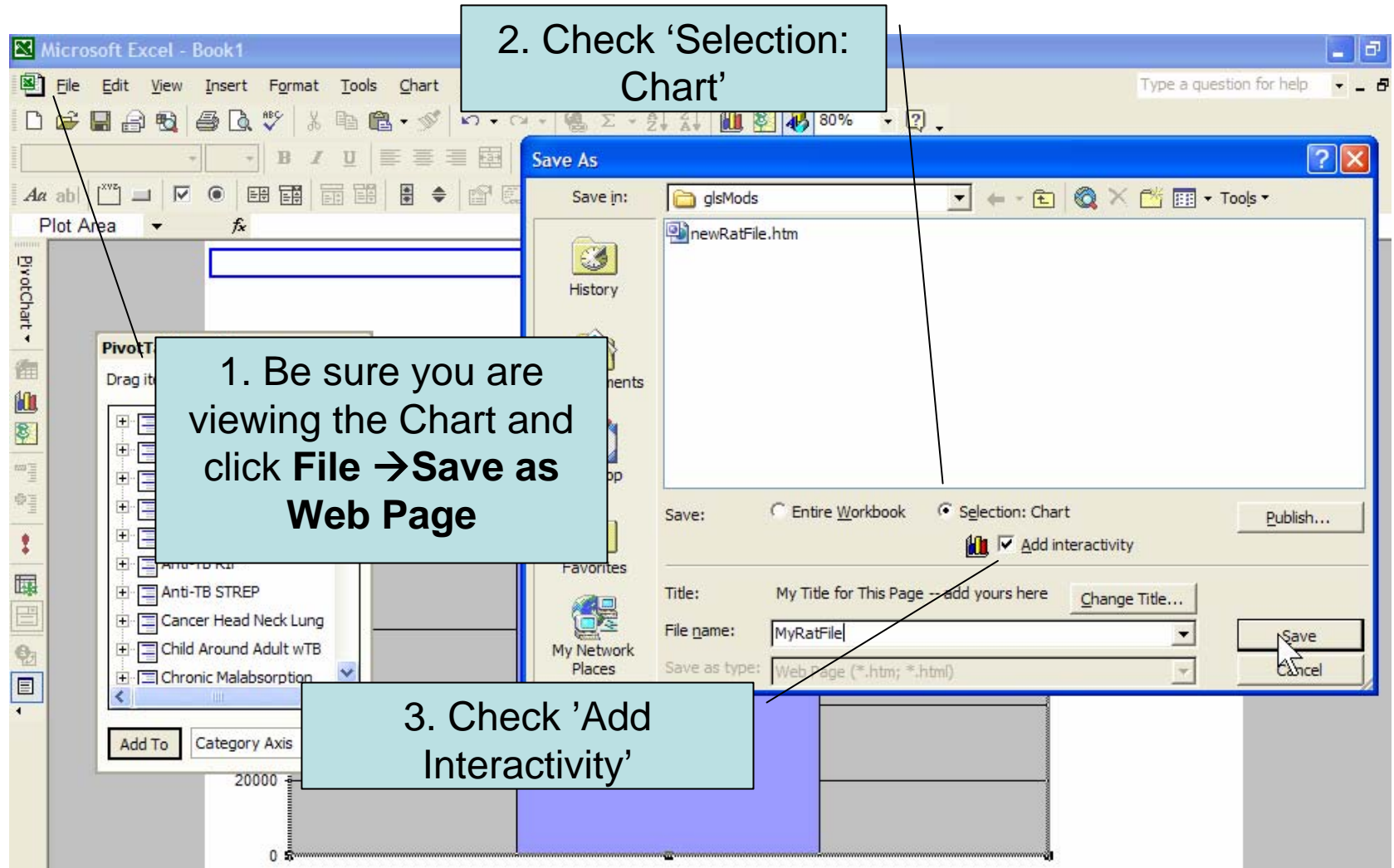
# Step 4: Pivot the Data



# Step 4: Pivot the Data



# Step 4: Pivot the Data



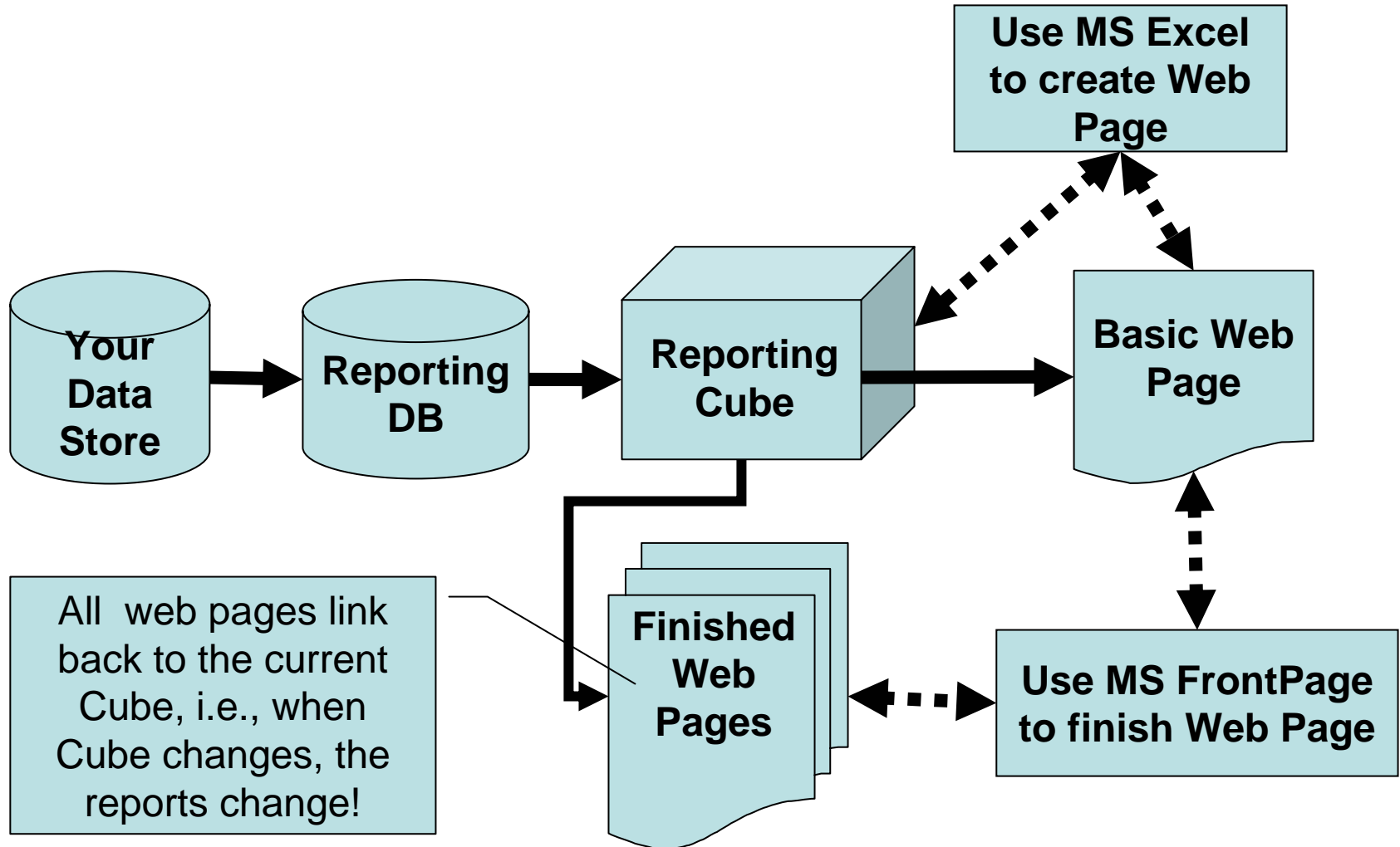
# Step 5: Modify Web Page

- Use MS FrontPage to open the web page you just created
  - For the geeks: this exposes all the objects for these report structures
  - Build one report for instant gratification and to visualize the changes to follow
  - Add metadata (see next slide)
  - Finish starter set of reports

# Step 5: Modify Web Page

- Make changes to make the data more **logical** and **useful**
  - Rename columns
  - Group data values, e.g. <blank>, “Not Entered” and “Unknown” into a new value
  - Add new calculated fields
  - Test as you go!

# Step 5: Modify Web Page



# Step 5: Modify Web Page

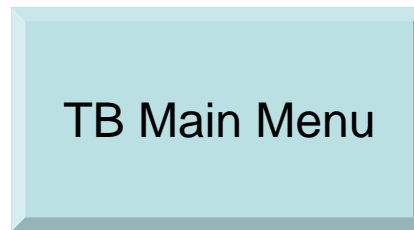
The screenshot shows the Microsoft FrontPage 2000 interface. The title bar indicates the file is 'newRatFile\_plain.htm' located at 'C:\TB Cubes\glsmods\newRatFile\_plain.htm'. The menu bar includes File, Edit, View, Insert, Format, Tools, Table, Frames, Window, and Help. The toolbar contains various icons for file operations, formatting, and inserting elements. The status bar at the bottom shows 'Normal', 'HTML', and 'Preview' views, along with a timer indicating '0 seconds over 28.8'.

The main editing area displays a web page with a bar chart and a data table. The bar chart, titled 'newRatFile\_plain.htm', has a vertical axis labeled 'Categories' with values 0, 10000, and 20000. The chart shows three bars: a grey bar on the left reaching approximately 10000, a blue bar in the center reaching approximately 15000, and a grey bar on the right reaching approximately 10000.

Below the chart is a table titled 'TN TB High Risk Assessment Tool (RAT)'. The table has six columns: Enc Date, Jurisdiction, Country of Origin, Race, Hispanic, and Sex. The first row shows data for the year 2004, with all categories set to 'All'. Below the table is a section labeled 'Drop Column Fields Here' containing a 'Pat Count' of 40,626. To the left of this section is a vertical label 'Drop Row Fields Here'.

The left sidebar contains icons for Page, Folders, Reports, Navigation, Hyperlinks, and Tasks. The bottom status bar shows the current view is 'Normal' and the document is in 'HTML' mode.

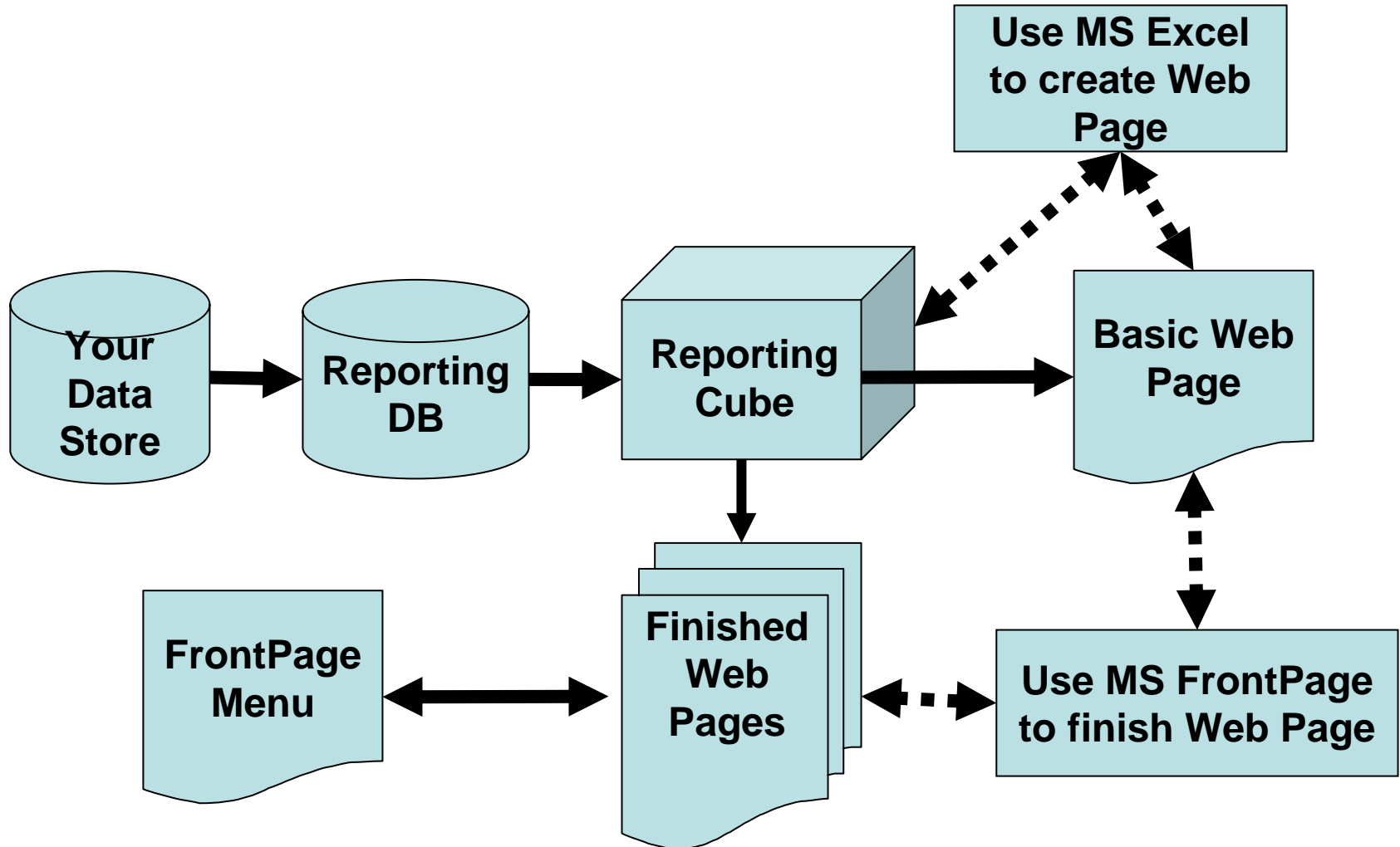
# Step 6: Develop a Menu Page



Note: Two versions of many reports; one for percents (see % sign) and the other for counts (see # sign)



# Step 6: Develop a Menu Page



# Step 7: Marketing & Distribution

- Plan
- Train users
  - End users – push buttons and get reports
  - Power users – push buttons to get started building the report they need
  - System Administrators
    - Supply updated data in future
    - Train new users
    - Answer questions

# Step 7: Marketing & Distribution

- Turn over to system administrators who provide current data and distribute to users
- It is implemented!

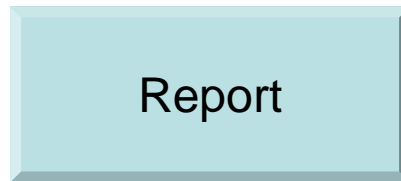
Be ready for quick round of modifications as power users define useful reports that need to be added to menus

# Remember

- To add new reports, you do not have to go back to the beginning.
- Go back to the Step 5 (MS FrontPage)
  - Modify a report
  - Save the new report
  - Add new report to a menu
  - Redistribute through your system administrator at next data refresh
  - Rock and roll

# Gee Whiz Features

- Cut and Paste into Excel or Word



# Cut and Paste into Word

Document2 - Microsoft Word

File Edit View Insert Format Tools Table Window Help Acrobat

Normal Times New Roman 12 B I U

1 2 3 4 5

I am MS Word!!!

TN TB High Risk Assessment Tool (RAT)					
Enc Date	Jurisdiction	Country of Origin	Race	Hispanic	Sex
2004	All	All	All	All	All
	<b>Risk of TB Infection(H)</b>				
	(Blank)	High	Low	Grand Total	
<b>Pos-Neg</b>	Pat Count	Pat Count	Pat Count	Pat Count	
(Blank)	132	8,690	6,693	15,515	
Negative	177	15,496	6,924	22,597	
Not Read	3	728	205	936	
Positive	4	1,500	74	1,578	
Grand Total	316	26,414	13,896	40,626	

# Cut and Paste into Excel

Microsoft Excel - Book2

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

H7 fx

	A	B	C	D	E	F	G
1							
2	Enc Date	Jurisdiction	Country of	Race	Hispanic	Sex	
3	2004	All	All	All	All	All	
4		Risk of TB					
5		(Blank)	High	Low	Grand Total		
6	Pos-Neg	Pat Count	Pat Count	Pat Count	Pat Count		
7	(Blank)	132	8,690	6,693	15,515		
8	Negative	177	15,496	6,924	22,597		
9	Not Read	3	728	205	936		
10	Positive	4	1,500	74	1,578		
11	Grand Total	316	26,414	13,896	40,626		
12							
13							
14							

# Gee Whiz Features

- Classic 2 x 2 tables



# Gee Whiz Features

- Classic 2 x 2 tables
- Toggle filter to show differences between a subset of data and all the data

# Counts and a Percent of Whatever

## Counts

TN TB High Risk Assess				
Enc Date ▾				
2004				
	HIV Mult Sex Partners ▾			
	Y	N	Grand Total	
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	
Positive	83	1491	1574	
Negative	1297	21123	22420	
Grand Total	1380	22614	23994	

## Row Percents

TN TB High Risk Assess				
Enc Date ▾				
2004				
	HIV Mult Sex Partners ▾			
	Y	N	Grand Total	
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	
Positive	5.27%	94.73%	100.00%	
Negative	5.79%	94.21%	100.00%	
Grand Total	5.75%	94.25%	100.00%	

## Column Percents

TN TB High Risk Assess				
Enc Date ▾				
2004				
	HIV Mult Sex Partners ▾			
	Y	N	Grand Total	
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	
Positive	6.01%	6.59%	6.56%	
Negative	93.99%	93.41%	93.44%	
Grand Total	100.00%	100.00%	100.00%	

## Percent of Grand Total

TN TB High Risk Assess				
Enc Date ▾				
2004				
	HIV Mult Sex Partners ▾			
	Y	N	Grand Total	
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	
Positive	0.35%	6.21%	6.56%	
Negative	5.41%	88.03%	93.44%	
Grand Total	5.75%	94.25%	100.00%	

# Toggling the Filter

Filtered Group

TN TB High Risk Asses			
Enc Date ▾	Race ▾		
2004	Asian		
	HIV Mult Sex Partners ▾		
	Y	N	Grand Total
Pos-Neg ▾	Pat Count	Pat Count	Pat Count
Positive		31.25%	31.25%
Negative	0.37%	68.38%	68.75%
Grand Total	0.37%	99.63%	100.00%

Total Population

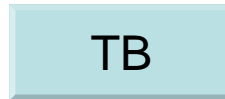
TN TB High Risk Asses			
Enc Date ▾	Race ▾		
2004	All		
	HIV Mult Sex Partners ▾		
	Y	N	Grand Total
Pos-Neg ▾	Pat Count	Pat Count	Pat Count
Positive	0.35%	6.21%	6.56%
Negative	5.41%	88.03%	93.44%
Grand Total	5.75%	94.25%	100.00%

Two Filtered Groups and Total

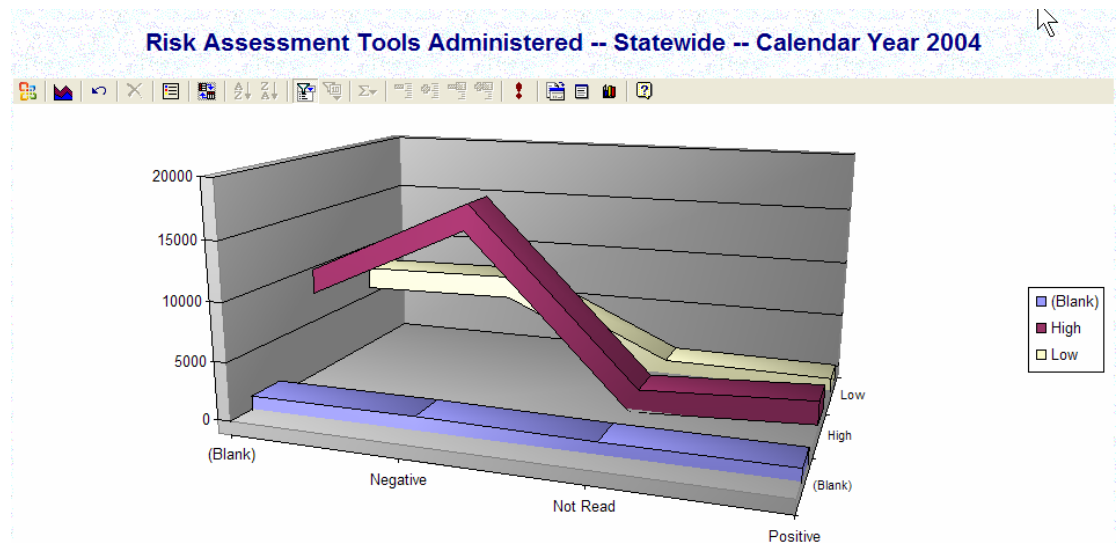
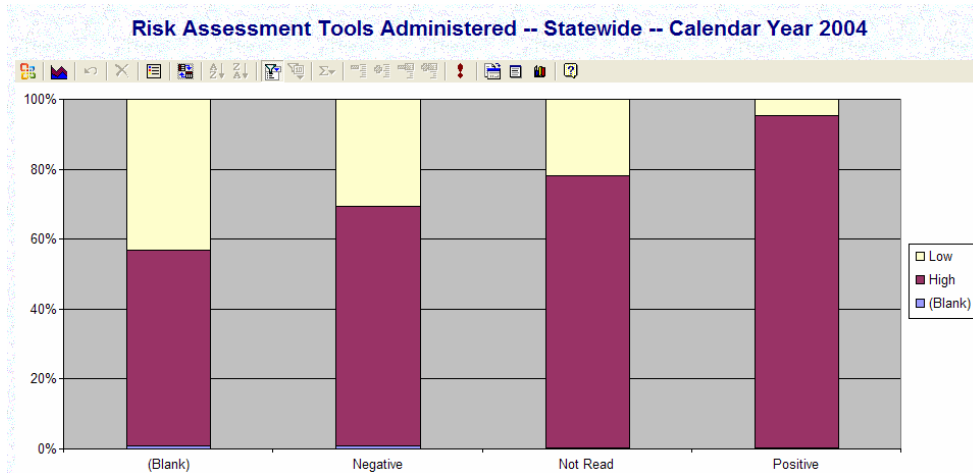
TN TB High Risk Assessment Tool (RAT)							
Enc Date ▾							
2004							
	Races ▾	HIV Mult Sex Partners ▾					
	<input checked="" type="checkbox"/> Asian	<input type="checkbox"/> Non Asian					Grand Total
	Y	N	Total	Y	N	Total	
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count	Pat Count
Positive		31.37%	31.25%	6.02%	6.29%	6.28%	6.56%
Negative	100.00%	68.63%	68.75%	93.98%	93.71%	93.72%	93.44%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

# Gee Whiz Features

- Change chart format



# Change chart format



# Gee Whiz Features

- Improve readability by decoding reported data values, e.g., “H” becomes “High Risk”
- Alter sequence of values

TB

# Readability & Sequence of Values

TN TB High Risk Assessment Tool (RAT)				
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾
2004	All	All	All	All
	Risk of TB Infection(H ▾)			
	(Blank)	High	Low	Grand Total
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	Pat Count
(Blank)	132	8,690	6,693	15,515
Negative	177	15,496	6,924	22,597
Not Read	3	728	205	936
Positive	4	1,500	74	1,578
Grand Total	316	26,414	13,896	40,626

With Values  
Rearranged

With Value  
Renamed

TN TB High Risk Assessment Tool (RAT)				
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾
2004	All	All	All	All
	Risk of TB Infection(H ▾)			
	High Risk	Low Risk	(Blank)	Grand Total
Pos-Neg ▾	Pat Count	Pat Count	Pat Count	Pat Count
Positive	1,500	74	4	1,578
Negative	15,496	6,924	177	22,597
Not Read	728	205	3	936
(Blank)	8,690	6,693	132	15,515
Grand Total	26,414	13,896	316	40,626

# Gee Whiz Features

## – Handle outliers

TB

- Group <blank>, “not entered”, “unknown”
- Group low/high values together
- Decide to eliminate values

## – Dealing with data anomalies (in the Tennessee case, jurisdictional artifacts)

- Metropolitan areas, not real jurisdictions, but medically significant
- Single county wholly surrounded by a multi-county region
- Extracting a large county from a multi-county region



# Grouping Values

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾	Sex ▾
2004	All	All	All	All	All
		Risk of TB Infection(H ▾)			
		(Blank)	High	Low	Grand Total
Pos-Neg1 ▾	Pos-Neg	Pat Count	Pat Count	Pat Count	Pat Count
<input type="checkbox"/> Not Read	(Blank)	132	8,690	6,693	15,515
	Not Read	3	728	205	936
<input type="checkbox"/> Negative	Negative	177	15,496	6,924	22,597
<input type="checkbox"/> Positive	Positive	4	1,500	74	1,578
Grand Total		316	26,414	13,896	40,626

Grouped

Delete old  
detail

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▾	Jurisdiction ▾	Country of Origin ▾	Race ▾	Hispanic ▾	Sex ▾
2004	All	All	All	All	All
		Risk of TB Infection(H ▾)			
		(Blank)	High	Low	Grand Total
Pos-Neg1 ▾		Pat Count	Pat Count	Pat Count	Pat Count
<input checked="" type="checkbox"/> Not Read		135	9,418	6,898	16,451
<input checked="" type="checkbox"/> Negative		177	15,496	6,924	22,597
<input checked="" type="checkbox"/> Positive		4	1,500	74	1,578
Grand Total		316	26,414	13,896	40,626

# Regrouping Jurisdictions

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▼	Country of Origin ▼	Race ▼	Hispanic ▼	Sex ▼	
2004	All	All	All	All	
		Risk of TB Infection(H ▼			
		(Blank)	High	Low	Grand Total
County ▼	Pat Count	Pat Count	Pat Count	Pat Count	
CHEATHAM		27	4	31	
ROBERTSON		208	7	215	
RUTHERFORD	2	630	41	673	
SUMNER	2	273	58	333	
WILLIAMSON	3	422	44	469	
WILSON		380	68	448	
DAVIDSON	24	3,411	725	4,160	
Grand Total	31	5,351	947	6,329	

# Regrouping Jurisdictions

TN TB High Risk Assessment Tool (RAT)						
Enc Date ▼	Pos-Neg ▼	Country of Origin ▼	Race ▼	Hispanic ▼	Sex ▼	
2004	All	All	All	All	All	
			Risk of TB Infection(H ▼)			
			(Blank)	High	Low	Grand Total
Region ▼	Jurisdiction	Pat Count	Pat Count	Pat Count	Pat Count	
Mid Cumberland and Nashville	MCR	20	3,082	1,104	4,206	
	NDR	53	4,895	2,188	7,136	
	Total	73	7,977	3,292	11,342	
Grand Total		73	7,977	3,292	11,342	

# Questions ???

# Contacts

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John A. Roberts

[John.A.Roberts@state.tn.us](mailto:John.A.Roberts@state.tn.us)

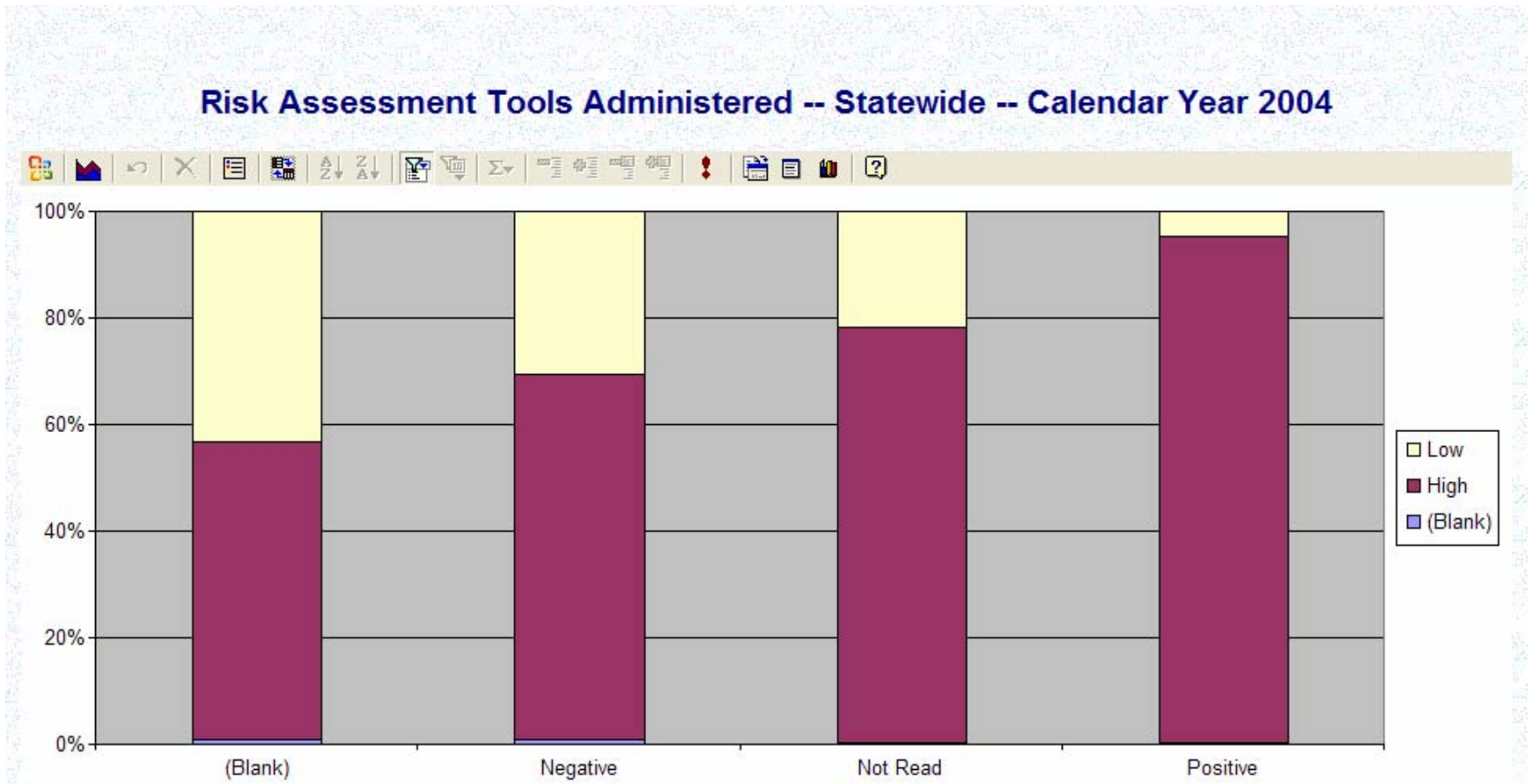
Gary Self

[Gary.Self@state.tn.us](mailto:Gary.Self@state.tn.us)

# Additional Slides

- Cube nomenclature

# The Chart

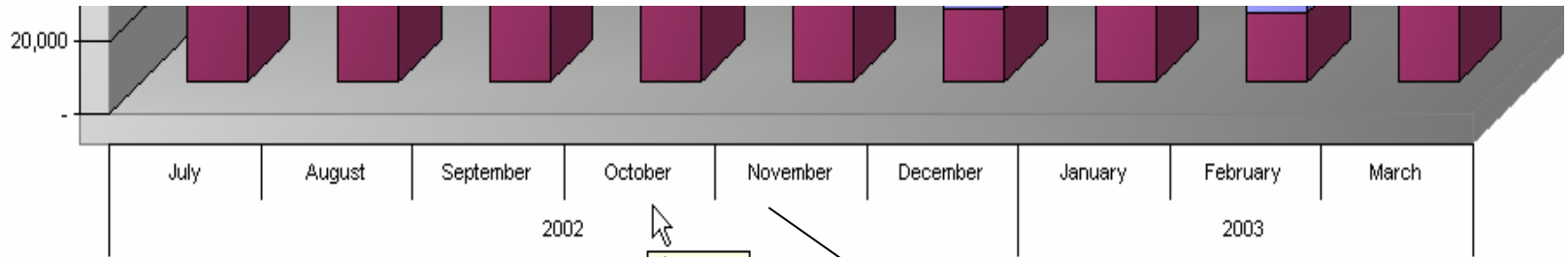


# The Table

TN TB High Risk Assessment Tool (RAT)					
Enc Date ▼	Jurisdiction ▼	Country of Origin ▼	Race ▼	Hispanic ▼	Sex ▼
2004	All	All	All	All	All
	Risk of TB Infection(H ▼)				
	(Blank)	High	Low	Grand Total	
Pos-Neg ▼	Pat Count	Pat Count	Pat Count	Pat Count	
(Blank)	132	8,690	6,693	15,515	
Negative	177	15,496	6,924	22,597	
Not Read	3	728	205	936	
Positive	4	1,500	74	1,578	
Grand Total	316	26,414	13,896	40,626	



# Getting Around



1. Note what is listed down this side of the Table

Current Fiscal Year Unduplicated Patients					
AgeInYrs ▾		Race ▾		Sex ▾	
All		All		All	
		HD Type ▾		Region	
		<input type="checkbox"/> Rurals <input type="checkbox"/> Metros		Grand Total	
YR ▾	Month	Pts	Pts	Pts	
2002	July	69,159	62,560	131,719	
	August	69,752	60,238	129,990	
	September	44,445	33,597	78,042	
	October	61,821	45,603	107,424	
	November	35,708	29,477	65,185	
	December	20,825	14,800	35,625	
2003	January	22,745	15,151	37,896	
	February	19,745	13,673	33,418	
	March	23,806	16,693	40,499	
Grand Total		368,006	291,792	659,798	

2. Is listed across here the bottom of the Chart

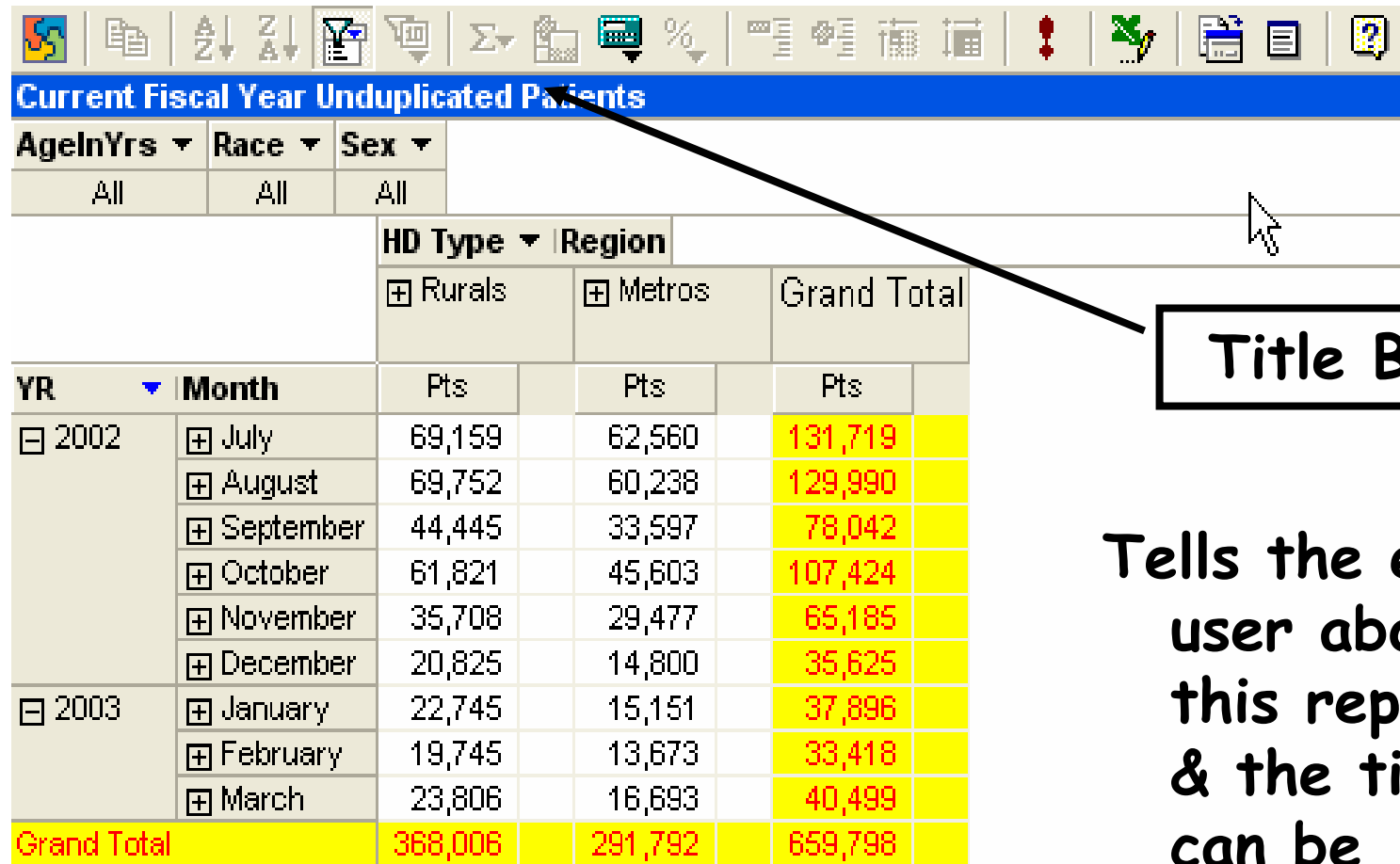
# What is it?

Current Fiscal Year Unduplicated Patients						
AgeInYrs ▼		Race ▼		Sex ▼		
All		All		All		
			HD Type ▼	Region		
			<input type="checkbox"/> Rurals	<input type="checkbox"/> Metros	Grand Total	
YR ▼	Month	Pts		Pts		Pts
2002	<input type="checkbox"/> July	69,159		62,560		131,719
	<input type="checkbox"/> August	69,752		60,238		129,990
	<input type="checkbox"/> September	44,445		33,597		78,042
	<input type="checkbox"/> October	61,821		45,603		107,424
	<input type="checkbox"/> November	35,708		29,477		65,185
	<input type="checkbox"/> December	20,825		14,800		35,625
2003	<input type="checkbox"/> January	22,745		15,151		37,896
	<input type="checkbox"/> February	19,745		13,673		33,418
	<input type="checkbox"/> March	23,806		16,693		40,499
Grand Total		368,006		291,792		659,798

Toolbar

Gives the user rapid access to the pivot table options

# What is it?



**Current Fiscal Year Unduplicated Patients**

AgeInYrs ▼ Race ▼ Sex ▼

All All All

HD Type ▼ Region

⊕ Rurals ⊕ Metros Grand Total

YR ▼	Month	Pts		Pts		Pts	
⊖ 2002	⊕ July	69,159		62,560		131,719	
	⊕ August	69,752		60,238		129,990	
	⊕ September	44,445		33,597		78,042	
	⊕ October	61,821		45,603		107,424	
	⊕ November	35,708		29,477		65,185	
	⊕ December	20,825		14,800		35,625	
⊖ 2003	⊕ January	22,745		15,151		37,896	
	⊕ February	19,745		13,673		33,418	
	⊕ March	23,806		16,693		40,499	
Grand Total		368,006		291,792		659,798	

**Title Bar**

**Tells the end user about this report & the title can be changed**

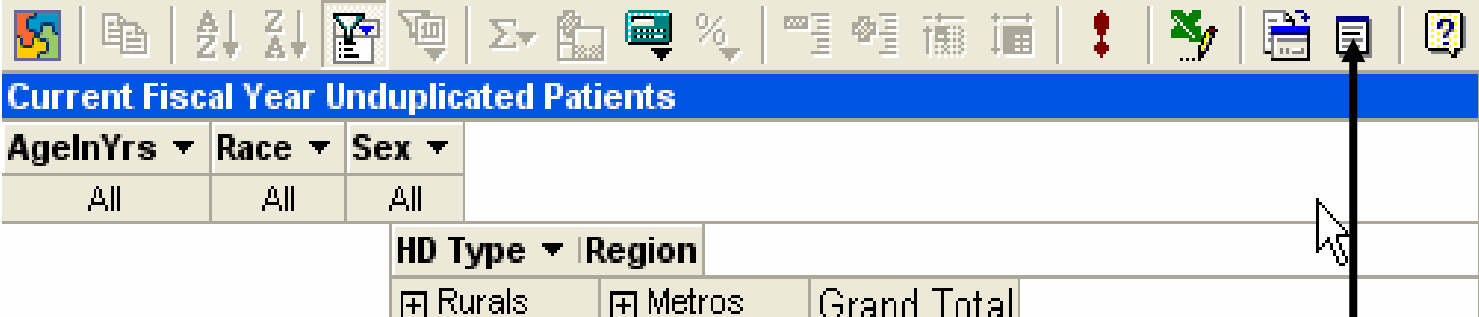
# What is it?

Current Fiscal Year Unduplicated Patients									
AgeInYrs ▼		Race ▼		Sex ▼					
All		All		All					
			HD Type ▼		Region				
			⊕ Rurals		⊕ Metros		Grand Total		
YR ▼	Month	Pts		Pts		Pts			
2002	⊕ July	69,159		62,560		61,733			
	⊕ August	69,752		60,238		129,990			
	⊕ September	44,445		33,597		78,042			
	⊕ October	61,821		45,603		107,424			
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2003	⊕ January	22,745		15,151		37,896			
	⊕ February	19,745		13,673		33,418			
	⊕ March	23,806		16,693		40,499			
Grand Total		368,006		291,792		659,798			

**Commands and  
Options Button**

**Context  
sensitive  
options for  
all parts of  
the table  
or chart**

# What is it?



**Current Fiscal Year Unduplicated Patients**

AgeInYrs ▼ Race ▼ Sex ▼

All All All

HD Type ▼ Region

⊕ Rurals ⊕ Metros Grand Total

YR ▼	Month	Pts	Pts	Pts
⊖ 2002	⊕ July	69,159	62,560	131,719
	⊕ August	69,752	60,238	129,990
	⊕ September	44,445	33,597	78,042
	⊕ October	61,821	45,603	107,424
	⊕ November	35,708	29,477	65,185
	⊕ December	20,825	14,800	35,625
⊖ 2003	⊕ January	22,745	15,151	37,896
	⊕ February	19,745	13,673	33,418
	⊕ March	23,806	16,693	40,499
Grand Total		368,006	291,792	659,798

**Field List Button**

Gives user  
access to  
all fields  
that the  
report has  
available

# What is it?

Current Fiscal Year Unduplicated Patients						
AgeInYrs ▼		Race ▼		Sex ▼		
All		All		All		
		HD Type ▼		Region		
		⊕ Rurals		⊕ Metros		Grand Total
YR ▼	Month	Pts		Pts		Pts
⊖ 2002	⊕ July	69,159		62,560		131,719
	⊕ August	69,752		60,238		129,990
	⊕ September	44,445		33,597		78,042
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	⊕ December	20,825		14,800		35,625
⊖ 2003	⊕ January	22,745		15,151		37,896
	⊕ February	19,745		13,673		33,418
	⊕ March	23,806		16,693		40,499
Grand Total		368,006		291,792		659,798

**Filter Area**

The fields in this area can either show 'All' values for a field or just one value for the field

# What is it?

Current Fiscal Year Unduplicated Patients						
AgeInYrs ▼		Race ▼		Sex ▼		
All		All		All		
			HD Type ▼	Region		
			⊕ Rurals	⊕ Metros	Grand Total	
YR ▼	Month	Pts		Pts		Pts
⊖ 2002	⊕ July	69,159		62,560		131,719
	⊕ August	69,752		60,238		129,990
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	⊕ December	20,825		14,800		35,625
⊖ 2003	⊕ January	22,745		15,151		37,896
	⊕ February	19,745		13,673		33,418
	⊕ March	23,806		16,693		40,499
Grand Total		368,006		291,792		659,798

Column Area

The fields in this area can either show 'All' values for a field, one value OR some of the values for the field

# What is it?

Current Fiscal Year Unduplicated Patients						
AgeInYrs ▼		Race ▼		Sex ▼		
All		All		All		
			HD Type ▼		Region	
			Rurals		Metros	
					Grand Total	
YR ▼	Month	Pts		Pts		Pts
2002	July	69,159		62,680		131,719
	August	69,762		60,238		129,990
	September	44,445		33,597		78,042
	October	61,821		45,603		107,424
	November	35,708		29,477		65,185
	December	20,825		14,800		35,625
2003	January	22,745		15,151		37,896
	February	19,745		13,673		33,418
	March	23,806		16,693		40,499
Grand Total		368,006		291,792		659,798

Row Area

The fields in this area can either show 'All' values for a field, one value OR some of the values for the field



# What is it?

Current Fiscal Year Unduplicated Patients							
AgeInYrs ▼		Race ▼		Sex ▼			
All		All		All			
		HD Type ▼		Region			
		⊕ Rurals		⊕ Metros		Grand Total	
YR ▼	Month	Pts		Pts		Pts	
2002	⊕ July	69,159		62,560		131,719	
	⊕ August	69,752		60,238		129,990	
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2003	⊕ January	22,745		15,151		37,896	
	⊕ February	19,745		13,673		33,418	
	⊕ March	23,806		16,693		40,499	
Grand Total		368,006		291,792		659,798	

Data Area

This is whatever you are totaling or counting, in this case unduplicated patients